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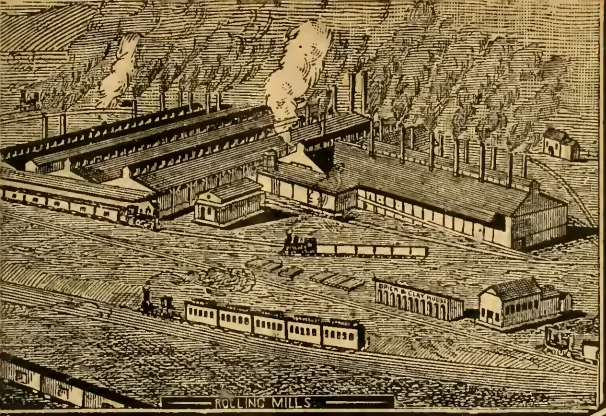
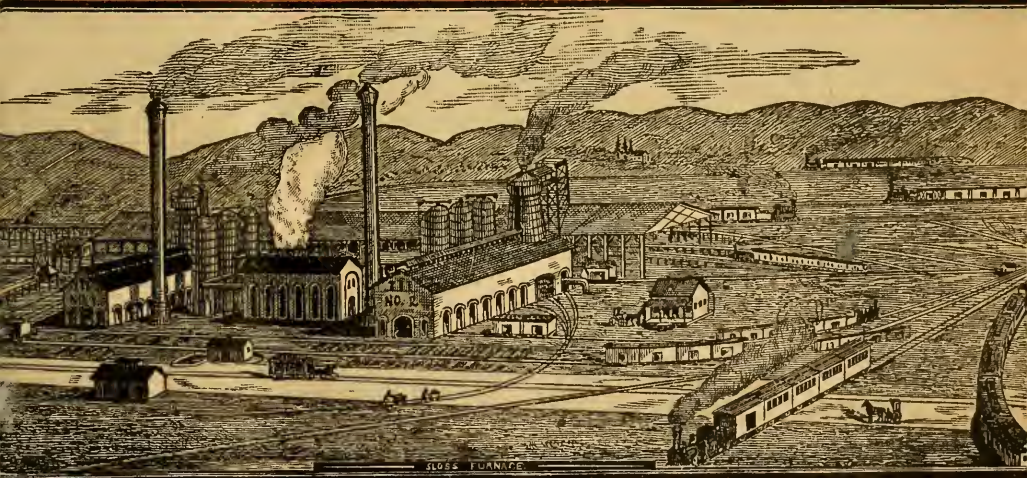


The Mineral Wealth of Alabama and Birmingham.

Illustrated



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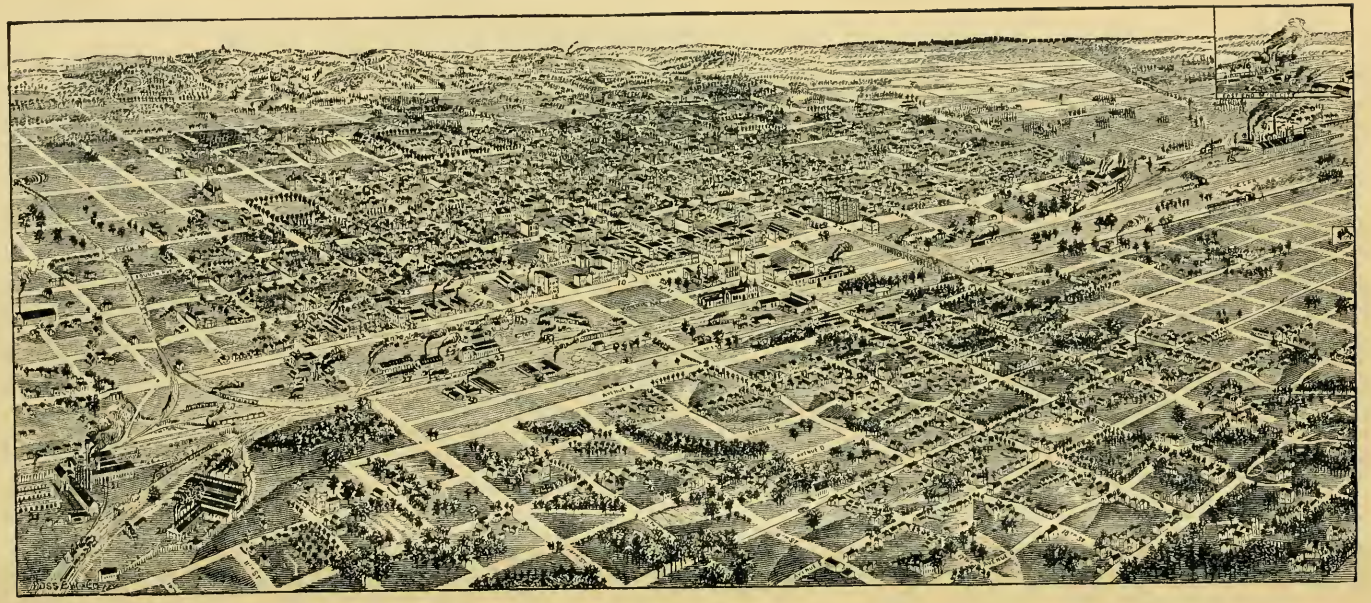

BIRD'S EYE VIEW OF THE CITY OF BIRMINGHAM.

THE MINERAL WEALTH

—OF—

ALABAMA

—AND—

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ROBERTS & SON, PRINTERS AND BINDERS,
Birmingham, Alabama.

TO THE WORKINGMEN

AND

TO THE WIVES AND DAUGHTERS

OF

BIRMINGHAM.

THRO' the night there arose a mighty voice
Of manhood calling to the strength of men,
And morning dawned upon an old, red field
Made glorious by a City's sudden birth.
Strange Providence of God that watches o'er
The destinies of nations, and ope'd His ears
To cries of hunger out of ruined homes,
And gave such stores where only bread was asked!
And set the Iron Mountain in the midst,
And, sheathed with coal, the breast of that grand State,
Whose wan and shrunken form, and chilly limbs
Needed new blood within each weakened vein,
Strong, red and healthful for a blessed old age,
And fire to glow again upon her happy hearth.
The City that was built by men, because
It was the answer of the Father's love.
That never turns away from cry of human need!
The little babe, that lay within the arms
Of that poor, weary, weakened mother-state,
Hath grown to such imperial stature now
Its arms uphold her in her olden pride,
And she forgets the past, when hope had died.
Its wealth hath robed her in fresh grace anew—
Its power restored the sceptre she had lost.

MARY GORDON DUFFEE.

BLOUNT SPRINGS, Alabama.

TO THE READER.

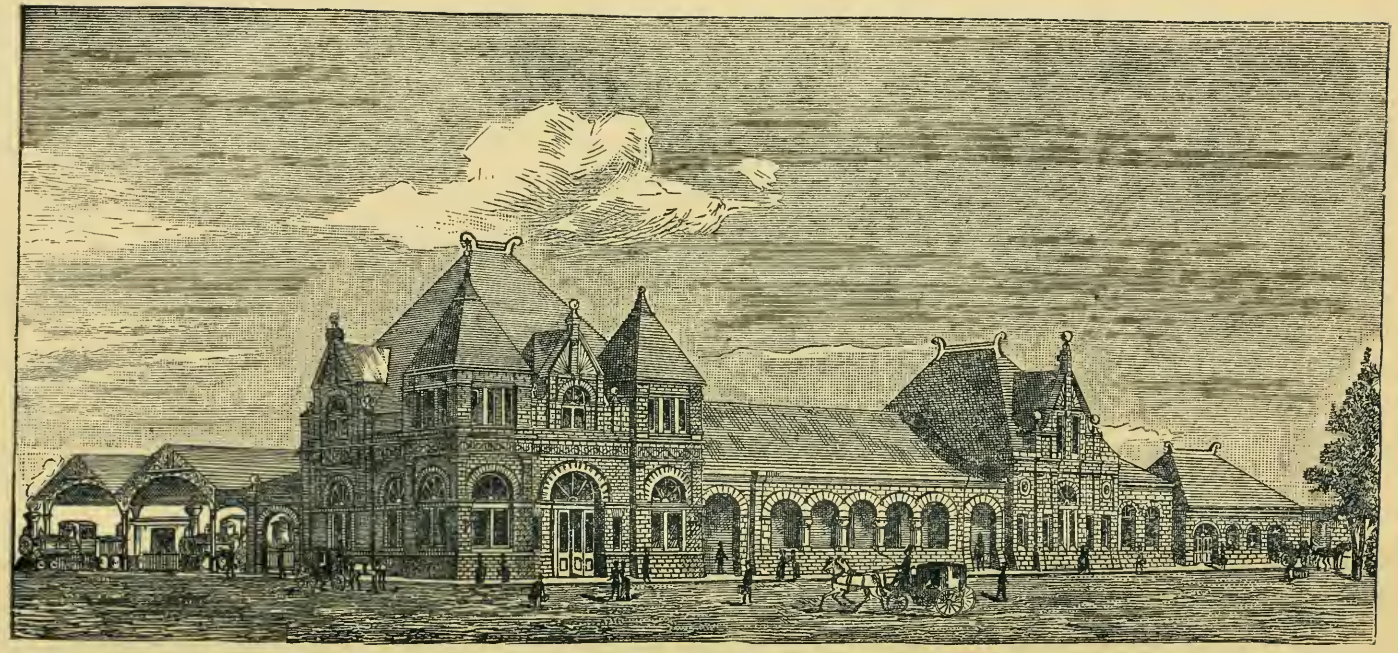
This book is the result of concerted action on the part of a few citizens of Birmingham, who, engaged otherwise in separate vocations, have united to prepare and publish it. There have been no local speculative influences, parties to its preparation. The accumulative fame of the mineral resources of Alabama, and the augmenting advantages of Birmingham as an industrial and distributive center, seem not only to justify an attempt to satisfy the steadily increasing demand in distant quarters for the character of the information these pages contain, but that the publication of facts so remarkable and suggestive in the field of industry, must redound to the benefit of those who have already acquired domiciliary interests therein, either as investors or as laborers.

I am not unconscious that statistics or illustrations which may expose facts or improvements representative of the city of Birmingham, with due correctness, to-day, are not to be relied on to-morrow to contain the limits of the same class of facts, or to express the completeness of the same area of improvements. He who at early dawn has stood on the mountain peak which towers above its fellows, to watch on the distant horizon the coming of the first ray of the rising god of day, and has seen the developing arch of light, full risen, conquer the shades of hill top succeeding hill top and valley after valley in its majestic march over space, until every hill and every valley beneath and around exults in the glistening sheen, may trace in this sublime aspect of Nature the fitting similitude of energies which spreading their enchanted wand over the crudities of wealth abounding here, continually subdue and convert them into forces which enlighten, adorn and ennoble life.

To the courtesy of Professors Eugene A. Smith, State Geologist, and Henry McCalley, Assistant State Geologist, the public are indebted for the admirable scientific essays, now first published, which comprise the first two chapters. To Hon. M. T. Porter, Dr. Joseph R. Smith, Dr. Henry M. Caldwell, E. L. Clarkson, Esq., Dr. A. T. Henley, and others, I acknowledge obligations for interesting facts concerning the early history of the city.

JOHN W. DUBOSE, Editor.

BIRMINGHAM, April 1886.



Union Passenger Depot, Birmingham, Ala.

Chapter I.

The Geological Formations of Alabama, In their Industrial and Agricultural Relations,

BY

Eugene Allen Smith,
State Geologist and Professor University Alabama.

Sec. I. The Metamorphic Region.—This division includes some of the most elevated lands in the State, in the counties of Cleburne, Randolph, Chambers, Lee, Macon, Tallapoosa, Clay, Coosa, Elmore and Chilton, and comprises an area of 4,425 square miles. This is sometimes alluded to as the "Granite region" and the "Gold region." The rocks are mostly crystalline slates of various characters, and very easily distinguished from the unerystalline rocks of the other sections of the State.

The prevalent soils are of two kinds, viz; a gray or more or less sandy soil; and a red clay loam. Varieties resulting from the admixture of the two are practically innumerable. Both of these varieties of soil in their virgin state are fertile, and well adapted to the production of crops suited to our climate. In their earlier occupancy the red soils, or soils in which the red clay loam predominated, were preferred by agriculturists, but as time passed on the gray lands have gained in favor, and are now esteemed the equal of the former.

The most desirable farming divisions of this section, embraced in the counties named, appear to be along its Southeastern border, in the counties of Chambers, Lee, Tallapoosa and Coosa, where the red loams are most commonly seen. In the interior of the section the lands are considerably broken, and good farming tracts are mostly confined to the bottoms and low grounds.

Sec. II. The Older Formations Including the Silurian, Devonian and Carboniferous.—A line drawn from Columbus, Georgia, in a Northwesterly direction and passing through Tallassee, Wetumpka, Centerville, Tuscaloosa, Fayette, Pikeville to the Mississippi border would embrace most of the area occupied by the older geological formations; including the Metamorphic already described, which latter occupies the Southeastern corner of said area. All territory to the North and Northwest—something over 17,000 square miles—belongs to this second division now described.

These two divisions are known as

THE MINERAL REGION

of North Alabama. The remainder of the territory of the State lying to the South and West is known as South Alabama, and is essentially an agricultural section.

This second division may be subdivided into two parts.

The first sub-division, occupying a strip about forty miles wide between the Metamorphic region of the Southwest and the line of the Alabama Great Southern Railroad, on the Northwest, is distinguished by the regularity of its topographical features. All the principal ridges and valleys are approximately parallel, having a Southwest and Northeast trend. On examination this regularity is found to depend on the fact that the underlying rock strata are not in horizontal position but are inclined, at often, very considerable angles, and their outcropping edges all have this general direction of Northeast and Southwest. And since these rocks are alternations of harder and softer materials the latter were easily washed out by streams and rains, while the former were more resistant to those agencies. The valleys and ridges thus determined must, of course, have the same corresponding general direction.

The second sub-division lacks this regularity in its topography, except where long and narrow valleys with their marginal and subordinate ridges traverse it from Northeast to Southwest. When these exceptional areas are examined further, it will be discovered that they are only outlying tracts of the first section, possessing the same peculiarities not only of geological structure but also of constituent material.

The first of these sub-divisions is known as

and the outlying tracts with similar structure are the CAHABA, JONES' ROUKS, WILL'S, MURFREE'S AND BROWNS' valleys.

The second sub-division includes two parts, viz:

THE C. COAL FIELDS AND THE VALLEY OF THE TENNESSEE.

The constituent materials of the rocks of all these older formations are, in their extremes, of two kinds: siliceous and calcareous. The rocks on the one hand sandstones and shales, on the other limestones. And the limestones are themselves often impregnated with siliceous matter.

Bearing in mind the general rule that where sandstones and other hard siliceous rocks make the surface, they are less wasted by denudation and other agencies, and mountains or hills are formed, and that the limestone areas are for the opposite reason usually valleys, which become ridgy and uneven when the limestones are siliceous or flinty, the connection between topography and underlying rock masses may be plainly seen.

Taken in a broad general sense, the strata of the older formations, the Silurian, Devonian and Carboniferous, consist of three sets of sandstones alternating with two of limestone. Of these the lowermost is a sandstone which is seen only in the mountain ridges in the Southeastern part of this division at no great distance on either side of the East Tennessee, Virginia and Georgia Railroad, from the Georgia border to the crossing of the Coosa river. These mountains are devoid of interest from an agricultural as well as industrial point of view, except insofar as that in the coves enclosed by them, and frequently upon their sides, some of the most extensive deposits of browns iron ore in the State are to be found. But these ore banks have probably been derived from another and overlying formation.

These sandstones in the lower part of the Silurian formation are followed by limestones, at first highly siliceous and shaly, afterward much purer, and these form the basis of the Coosa Valley, and occupy also a very considerable part of the other outlying valleys named above. Where the flinty and shaly portions of the limestones form the surface, lines of hills and ridges occur, while the topography of the purer limestones is much smoother.

The lower Silurian limestones, aside from their wide distribution are of much interest, from the fact that some of the very

best of our upland soils result from their disintegration. I have only to point out that the beautiful valleys with fertile red soils, extending through Calhoun and Talladega counties, and occuring in less continuously connected areas also in Shelby, Bibb, Tuscaloosa, Jefferson, St. Clair, Blount, Etowah, Cherokee and DeKalb counties, are derived from the limestones of this age, in order that their importance from an agricultural standpoint may be clearly apparent.

In addition to this the great bulk of the brown iron ores of the State are found in pockets intimately associated with these limestones, from the disintegration of which they have, in the opinion of geologists been mainly derived. Here the reader is referred to the article of Professor McCalley for details concerning these ores.

Above this series of limestones comes another, the second sandstone formation, to which the Red Mountain ridges owe their existence. These ridges are found on each side of the long narrow valleys heretofore enumerated. Too steep in general for the plow, they are interesting because they carry a bed, or beds, of red iron ore of varying thickness. All along the Coosa Valley there are long narrow valley-like depressions running Northeast and Southwest abounding in these red ore ridges, and the amount of iron they contain is practically inexhaustible.

Above the Red Mountain sandstone we have again a second limestone formation, at first siliceous, afterward purer, belonging to the Sub-Carboniferous formation. These limestones occur in narrow strips, in the long narrow valley spoken of but their principal area is in the valley of the Tennessee.

The siliceous portions of this limestone make the Northern parts of the Valley of the Tennessee, characterized by light, gray, siliceous soils, in the section locally designated as the "Barrens." The term must be explained to denote not want of fertility, but rather the neglect permitted to overtake the locality when cotton planters worked their negro slaves in the more fertile region of the immediate lowlands. The overlying purer limestones of this formation form the basis of the splendid soils of the Valley of the Tennessee, which though in cultivation for sixty-five years, with small attention to their preservation, generally no such attention, yet continue highly productive, making this part of the State one of the most prosperous in agriculture. The scenery of

the Valley of the Tennessee recalls portions of the region based upon the lower Silurian limestones in Talladega and Calhoun counties, and the resemblance between the two sections is still further carried out in the circumstance that the Sub-Carboniferous limestones, like the Silurian, bear vast quantities of iron in the form of deposits of brown ore. The most important ore banks of this formation are in Franklin county and are spoken of more particularly by Professor McCalley as stated.

Next above this limestone comes the third great sandstone formation with its associated shales and coal beds, appearing in Lookout Mountain, Raccoon Mountain, and Shades and other mountains.

THE GRANITE AND GOLD REGION.

This comprises the counties of Cleburne, Randolph, Chambers, Lee, Macon, Tallapoosa, Clay, Coosa, Elmore and Chilton.

The mineral productions of this region are more varied than those of any other section of the State, and include, asbestos, corum, corundum, tin ore, various ores of copper, gold, graphite or black lead, kaolin, magnetic ore of iron, manganese ores, marbles, especially the white statuary marble of Talladega county, mica, pyrites which may in the near future become an important article for the manufacture of sulphuric acid, and soapstone, or steatite. Of these the gold, the copper, the soapstone, the mica, the tin and marble ore have been already worked with more or less success, while some of the others will probably come into use as they are known to occur in very considerable quantities.

THE COAL MEASURES.

The coal measures are in three parts known as the Coosa, the Cahaba and the Warrior fields, once continuous, but now separated by the long, narrow limestone valleys so often alluded to.

The soils of the coal fields, as might be inferred from the prevailing material of the rocks from which they have been derived, are sandy and in general, comparatively poor.

Yet, with a moderate outlay for fertilizers, they are exceedingly safe and reliable. They seem to be specially adapted to the cultivation of the grape, which promises to become one of the industries of the future.

As a matter of course, however, the main interest of this section depends upon its coal seams which are only now beginning to be worked; but it needs no prophet to foresee that the future

of Alabama will be largely shaped by the mining and other industries connected with its coal.

THE NEWER FORMATIONS OF SOUTH ALABAMA.

The newer formations of the State underlying an area of nearly 31,000 square miles, consist of sands and clays more or less indurated, marls, and limestones, arranged in beds which have a general dip or slope towards the South or Southwest, the slope gradually diminishing as the Gulf is approached. These deposits have been assigned to three or four geological formations, viz: Cretaceous and perhaps an underlying formation, the Tertiary, and Post Tertiary.

I. Cretaceous and underlying formations between the Coal Measures at Tuscaloosa and the undoubtedly cretaceous rocks near Finch's Ferry in Greene county, occur great deposits of sands and purple clays, whose geological age has not yet been satisfactorily determined, though it is probable they belong to the Jurassic or Triassic.

These deposits exercise very little influence on either the topography or the soils of the region which they underlie, and hence possess but small interest to the general reader.

The cretaceous rocks consist of a great series of sands and clays below and a limestone above. The sands and clays like those of the underlying group above mentioned, are of comparatively little general interest and hence need no extended notice, but the limestone, which is known by the name of the rotten limestone, underlies a strip of country extending across the State East and West with an average width of about thirty miles, and as it forms in general a marly or limy soil of great fertility, its importance from an agricultural point of view is very great. The region of its occurrence is known as the black belt or canebrake, and is noted for the productiveness of its soils. These have been described somewhat in detail in the report of the Geological Survey for the years 1881-82, to which the reader is referred.

On each side of this canebrake region there have been lately discovered beds of phosphatic material which bid fair to bring about soon a profound modification of the farming practices, at least of the region where they occur.

The phosphate belt lying south of the canebrake, is probably destined to be a more important one than the preceding, since the phosphates are in the form of phosphatic marls and lime-

stones as well as nodules of nearly pure phosphate. The marls contain from two to five per cent. of phosphoric acid, while the limestones hold as a rule, a good deal more, even up to 12 and 15 per cent.

These phosphatic limestones can very probably be used after a preliminary burning. In the vicinity of Dayton, in Marengo county, appears to be the largest and richest of phosphatic deposits yet discovered.

This Southern belt, like the other, extends almost, if not quite, across the State, from Sumter county to Barbour.

2. Tertiary.—The lowermost beds of this formation consists of sands and clays holding beds of lignite or brown coal, which is often mistaken for true bituminous coal, but which contains a much higher percentage of ash or inert mineral matter than any coal of commercial value.

In this connection it may be mentioned that from the lower part of Marengo county, specimens have been obtained of a kind of asphaltum, which, if found in sufficiently large quantities, will undoubtedly be of value. This substance has over 60 per cent. of volatile bituminous matter, and only one-tenth of one per cent. of ash.

The belt of phosphates which lies immediately to the north of the Canebrake has its phosphatic matter (1) in the form of nodular or concretionary masses of nearly pure phosphate of lime, which have, however, not yet anywhere been found in sufficiently large quantity to be of commercial value (2) impregnated beds of green sand and other sands, to the extent sometimes of 10 per cent. of phosphoric acid. These phosphoric green sands have been followed across the State from Pickens County to Wetumpka, and even so far as a near approach to the Georgia line in the same course. Until Wetumpka is reached they are from two to three feet in thickness.

There can be no doubt about the value of such marls in the vicinity of their occurrence even though they should not be rich enough to bear transportation to great distances.

The celebrated marls and green sands of New Jersey are quite similar in composition but contain, if anything, a smaller percentage of phosphoric acid than ours.

The upper parts of the Tertiary formation are much more calcareous than the lower, and hold two very considerable beds

of limestone which together constitute the White Limestone of our geologists. The lower part of the White Limestone resembles the Rotten Limestone of the Cretaceous formation, and like it produces a heavy fertile soil, occurring in the "Lime hills" region, as we have termed it.

Between the limestone formation in the upper part of the Tertiary and the Lignitic of the lower, occurs a great sandstone formation which has been called the "Buhrstone" by Professor Tuomey. This forms one of the most prominent land marks of Southern Alabama, for there its resisting materials crop out in a line of high hills extending across half the State.

The whole Tertiary formation in Alabama is remarkable for the fact that throughout its whole thickness beds of marl are to be found inter-stratified with its other materials, and as these marls usually have a very large percentage of green sand, their importance to agriculture in the future cannot be overestimated. The two most extensive of these marl deposits occur—the one on the Tom Bigbee at Nanafalia and Wood's Bluff, and the other on the Alabama at Black's and Gullette's Bluffs, and below Bell's Landing.

The Nanafalia and Gullette's Bluff marl is remarkable for its great extent. It consists of a mass of shells over fifty feet in thickness. Its importance as a marl can be directly seen along its line of outcrop across the country, where the mingling of the marls with the soil has produced spots of very great and permanent fertility. The Wood's Bluff marl, though less thick, is no less important in its effects upon the soil as may be also proven by the fertility of the soil in the outcropping spots through the vicinage.

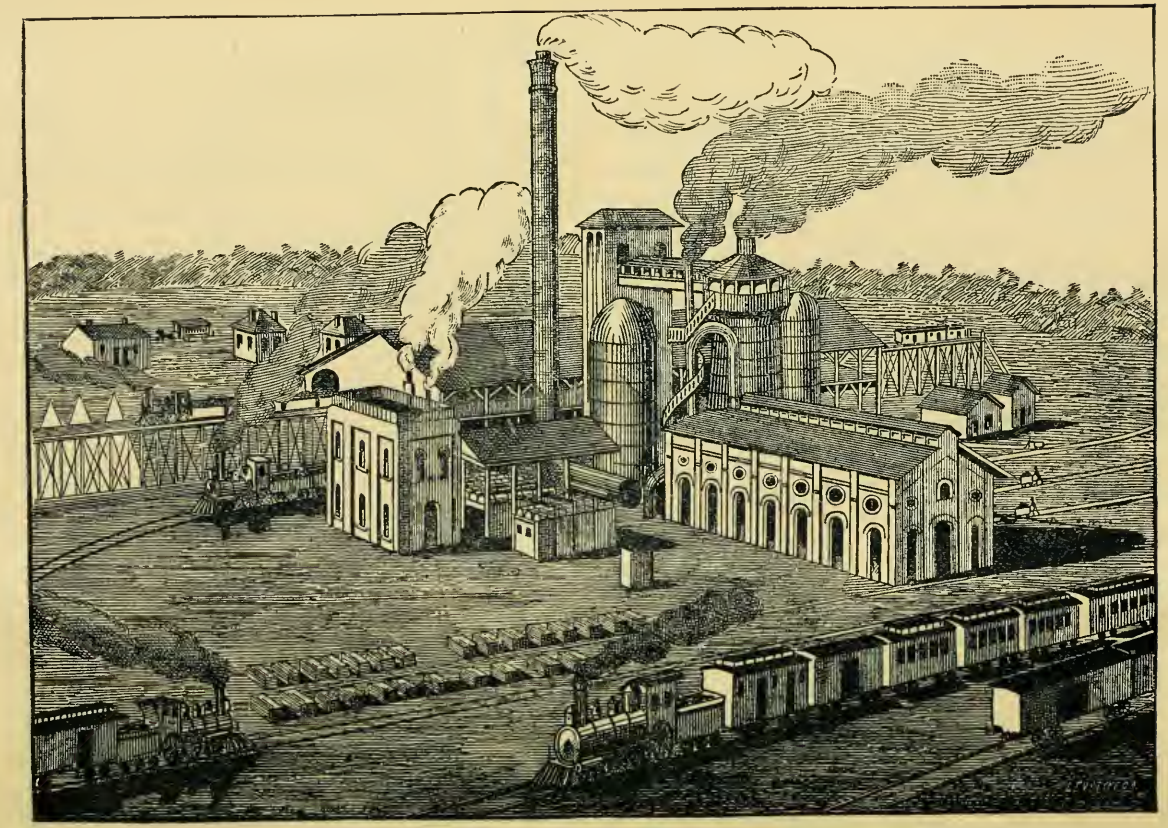
It will be observed that both of these marl beds lie convenient to navigable streams running through cultivated farms, and tapped at several points by railroads running at right angles to the rivers. Hence the channels of commerce are awaiting the pick of the miner.

During the summer of 1884, Mr. D. W. Langdon, Jun., of the Geological Survey, while collecting for Mr. T. H. Aldrich, discovered that several of the marls of the Tertiary formation contained very considerable quantities of phosphate of lime, either in the form of phosphatic nodules, or disseminated through the mass of the marls. The most important of the phosphatic

marls of this horizon occurs in the White Limestone region where several localities have been examined. It is probable much of the fertility of the "Limehills" is due to the phosphates which have been overlooked.

The Marengo County Nanafalia marl has also in some of its layers very considerable percentage of phosphates which will undoubtedly greatly enhance its value. It is to be noted that the phosphatic deposits of Alabama have only recently been known to exist, and for lack of time have not yet been examined except in the most superficial way. We can therefore only give surmises as to the influences which they will exert upon the agriculture of the State, but enough is known to place beyond any doubt their great importance. What the iron ores and coal are to North Alabama, the phosphates will be to South Alabama.

In the preceding sketch of the geological formations of the State, it will be seen that about one-third of the area is occupied by those rocks which furnish coal, iron, and other mineral matters of industrial importance, while in the remaining two-thirds agriculture is the main pursuit of the population, and the geological formations have, until recently, been of importance only in connection with the soils to which by disintegration, they give rise. Since the discovery of the existence of phosphate beds and their wide distribution in the strata of at least two geological formations, these last bid fair to rival the formations of North Alabama in the importance of the mineral matters which they hold; and there can be no doubt that when the phosphatic deposits come to be worked up, they will affect the fortunes and interests of a very much larger proportion of the population of Alabama, than is concerned in the production of coal, iron, copper, gold, and the other minerals of North Alabama, although the products of this section, the coal and iron in particular, will probably concern a much larger number beyond the limits of the State.



THE MARY PRATT FURNACE, Birmingham, Ala.

CHAPTER II.

NORTH ALABAMA,

OR

The Mountain, Manufacturing and Mineral Region of Alabama.

BY

HENRY MCCALLEY, A. M., C. & M. E.

Chemist and Assistant State Geologist.

PART I.

General Description—Tennessee Valley—Black Belt—Coal, Iron and Limestone, the Three Great Powers of Wealth—Coal Measures the Thickest in the United States—Warrior, Cahaba and Coosa Coal Fields—Summation.

As it is of the utmost importance to the interest of the State of Alabama to make known as early and as thoroughly and as widely as possible her natural resources and as it is a part of our duty, we take great pleasure in telling what we know about

NORTH ALABAMA, OR THE MOUNTAIN, MANUFACTURING AND MINERAL REGION OF ALABAMA.

We shall of necessity have to be brief, but at the same time we shall attempt, so far as we go, to give a truthful account of the great natural advantages and wonderful mineral wealth of this part of the State. This region may be said to extend from the *Black Belt, Canebrake* or *prairie lands* on the South to the State of Tennessee on the North, and from East to West across the State. It is the expanded and flattened Southwestern terminus of the great Appalachian chain as it gradually dies away, and is for the most part a broad, elevated, sandy plateau with long narrow limestone valleys, running almost Northeast and South-

west, near its Northern and Southern boundaries. Its loftiest points are in the extreme northeastern part of the State, where it is most rugged and broken, and where the Allegheny mountain runs out or exhausts itself. These high points are the loftiest in the State and are from 2,000 to 2,500 feet above the sea level, though the average level of this mountain region is not much over 600 feet above the Gulf of Mexico. From this elevated Northeast corner, the area, as a whole, gradually slopes to the Southwest until it sinks below the drainage level and is lost under more recent formations near the belt of prairies. The greater part of its surface, outside of the above limestone valleys, is composed of the *Coal Measures*, to which, with older formations, belong the hard rocks forming the first cascades or obstructions to navigation in the Alabama rivers. Throughout this entire region, there can plainly be seen a strict relationship between the

Mineral Exposition Building, Birmingham, Ala.

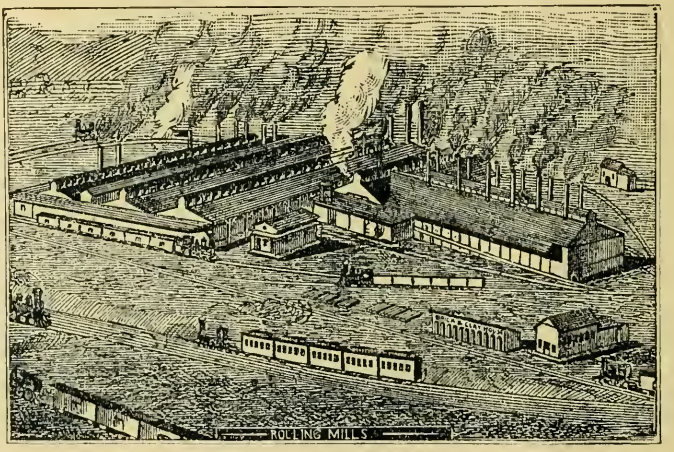
topographical features, the variety of productions and the geological structure. Its climate is bland, equable and delightful, with a mean annual temperature of about 58 degrees F., and its atmosphere is pure, clear and crisp. It has an annual rainfall of about 50 inches and we believe it to be one of the healthiest and most pleasant regions in the world in which to make a home. The greater part of it is dotted over with free running, everlasting springs, which during the summer months have a tempera-

ture of from 60 to 65 degrees F. These springs when of the sandy plateau, are usually of a pure freestone water, and when of the limestone valleys of a limpid limestone water, though, especially among the former, there are many strong and palatable waters of sulphur, chalybeate and alum springs scattered over this region. Most of the soil is sandy and poor, though, besides the fertile long narrow anticlinal valleys running through this region from Northeast to Southwest, there are, along its northern and southern boundaries, two of the most noted and productive agricultural areas of this or any other country, namely: the *Tennessee Valley* and the *Black Belt prairies*.

Tennessee Valley—The Tennessee Valley proper, or the Valley of North Alabama, will average some fifteen miles in width and stretches entirely across the State from East to West along the Tennessee River. It has been called the garden spot of Alabama and is truly a most delightful country in which to live. In *ante bellum* days when Alabama was at its agricultural zenith, this valley was second only to the *Black Belt* in its agricultural products, which comprised everything necessary for the sustenance of man and beast. No natural scenery, in my eyes, exceeds in beauty the oak crowned knolls and ridges of this valley, upon which stood the once palatial residences of the then princely cotton planters. The soil was rich, the climate delightful and the waters health giving; what more could the farmer have asked of nature to make life desirable and home attractive? This valley owes its existence entirely to erosion, the agencies of which are now at work, though it is believed, not to the same extent as in days gone by. It has extending down into it from the North the terminal ridges of the Cumberland mountain, which are from 800 to 1,000 feet above the general level of the valley and which do most to render the scenery varied and picturesque. These terminal ridges are all more or less hollow and doubtless many of them enclose subterranean lakes which have their outlets in some of the *big springs* so numerous throughout this section. Many of these *big springs* as they gush forth from the mountain sides or boil up from the low flat places, give vent to streams which carry off from 800 to 1,200 cubic feet of water per minute. Frequently these springs have been dammed up at their mouths into subterranean mill ponds and made to run mills almost as soon as they come to light. It is

along this valley that the sub-carboniferous rocks of Alabama are most highly developed, reaching a thickness of some 1,500 feet, and it is in these rocks that the remarkable caves of North Alabama occur. These caves contain deposits of marl, bat guano, and of earths of nitre, alum and saltpetre, and from them there frequently issue bold streams of limpid water.

The Black or Cotton Belt, Canebrake or Prairie Lands—These lands extend across the State in a strip about 30 miles wide and before the war produced more of agricultural value than any like area in the United States. The soil is based on the rotten limestone, and is famous for its long continued productiveness. For from fifty to sixty years, the farmers of this section greedy of present gain and unmindful of the future, have taxed this generous soil to its utmost capacity in cotton and



Birmingham Rolling Mills.

corn, and still it yields remunerative returns in these crops for the labor bestowed. Having within it and on each side of it, the newly discovered rich phosphatic deposits, it is destined never to become poor.

As this *mountain region* contains most of the minerals in the State of any importance, with the exception of the above phosphates, we have termed it also the *mineral region*; and as it has such exhaustless provision producing areas on the North and South as the Tennessee Valley and the Black Belt, and is so admirably furnished with the means of cheap water and steam power and all the raw materials, we have called it also the *manufacturing region*, and we predict that, in a few years, it will ren-

der Alabama much more famous and will bring her in a larger revenue for its manufactured products than all of her raw cotton did in 1860.

STONE COAL, IRON ORES, LIMESTONES.

Stone coal and iron ores are the chief or most important minerals of this section of the State, as they are everywhere when possessed in sufficient quantities. Coal has been termed the source of power iron the source of strength, and well they have, for they are the two most important elements in all commercial and manufacturing success. To them are attributed, much more than to all other minerals combined—the wealth, vigor, civilization and material advancement of all progressive nations. This is just as we would have it, for in stone coal and iron ores Alabama can compare most favorably with the world. We would not give the combined wealth of these two minerals and limestone in the *mineral region* of Alabama for all the gold fields on the globe, for in them are stored up the great foundation stones, as it were, of future greatness and wealth which will enable us for centuries to come to demand, in exchange for them, golden tributes in ready made coin. Other minerals may, and do, lend prosperity to a country, but it is short-lived and local in importance, when compared with that insured by these *three great powers of wealth.* They, in the wonderful deposits which are said to astonish every one but ourselves, were suspected in this region more than half a century ago, but, for want of transportation and capital, they have been allowed to remain unmolested until within a few years ago when systematic efforts were set on foot to develop them. We believe, or in fact we know, from our imperfect knowledge of these resources and from the many paying investments which we see rapidly going up around us, that these minerals will, without a doubt, render this region within a score of years not less famous for coal and iron than the great State of Pennsylvania.

COAL AND COAL MEASURES, THE THICKEST IN THE UNITED STATES.

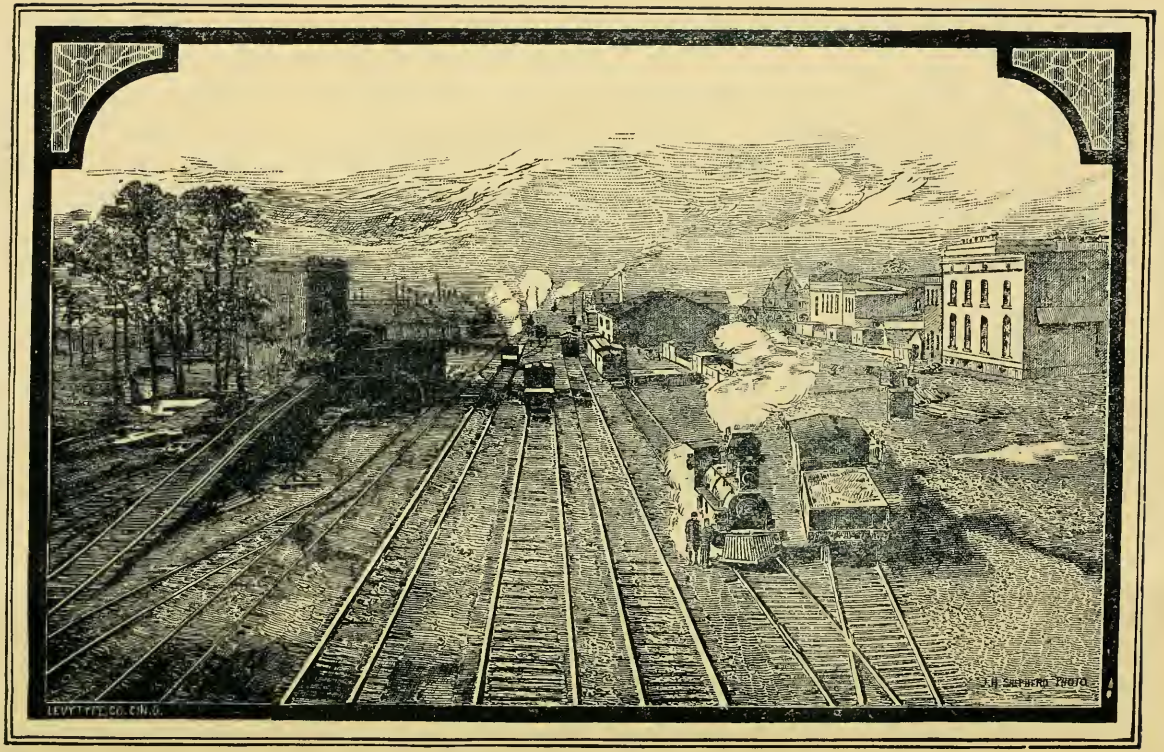
Stone coal has been one of the main instruments in the promotion of the rapid progress of the present century. Without it, commerce and manufacture would not have reached their present unprecedented degree of prosperity ; and without it, no people can ever expect to excel, or gain permanent success, in

these great industries. We have here in Alabama, the most southern terminus of the great coal basin of the Ohio or of the great Appalachian coal field, as it thickens, widens and flattens before dying out or becoming covered up. It once formed, here in Alabama, one great connected coal field, covering nearly one-fourth the surface area of the State, but now it consists of three more or less distinct fields with an estimated aggregate area of 8,860 square miles, having, by an all-wise act of Providence, been cut up by long narrow anticlinal valleys which hold innumerable and inexhaustible beds of fine limestone, and of red and brown iron ores. These three coal fields were named by Professor Tuomey in 1849, the Warrior, the Cahaba and the Coosa, respectively, from the names of the rivers which drain them, and, in a general way, are long, shallow, tray-shaped depressions, made so by their elevated rims along the limestone valleys. They are all fertile in coal and two of them, at least, comprise *the thickest coal measures in the United States.* They have many advantages, the most important of which are, the inexhaustible quantity and unexcelled quality of their coal, and the nearness to their coal of the iron ores and limestones which protrude up between them, and the ease and cheapness with which their coal can be mined, and their most favorable location, for, as has been said, they are bounded on three sides by coal-less areas and are the nearest of any coal fields to the Gulf of Mexico and the Atlantic ports south of Charleston. Their most productive measures have also the great advantage of easy accessibility by both land and water, for they are not on the tops of high and rough mountains as in other States, but form comparatively low plain-like areas with free running rivers winding through them, which can be made navigable the year round for steam tugs and coal barges. They consist of a series of sandstones (conglomerates) and shales in which occur the interbedded seams of coal. Most of the coals have under-beds of fire clay and at several horizontal positions there is some little limestone. The first coal mined in Alabama, according to Professor Tuomey, was in the year 1834, near the University of Alabama, and after that time for many years, up to the advent of the central railroads through Alabama, or until about fifteen years ago, much coal was raised during the summer months at low stages of the water, in an unsystematic way, from the outcrops in the

beds of the rivers and creeks near the rivers, and loaded in flat-boats, built close at hand, ready to be floated down the river at the first freshet. This business, however, was so precarious of life and property, that no considerable capital was ever invested in it and no regular miners ever engaged in it, and it was not until after the building of the Montgomery and Decatur railroad in 1872, that any coal mining on an extensive scale, and after scientific methods, was ever done in Alabama. The coals of these fields are all bituminous coals, but are of every variety and suitable for every purpose to which bituminous coals can be applied. Some of them are very highly bituminous, or gas making coals, while others, though free burning, are dry and might be called semi-bituminous coals. Some are bright and hard and well adapted to much handling, while others are of a duller color and of a softer and more friable nature. Some have been proven by experiments and uses on a large scale to be especially fitted for heating, steaming, blacksmithing and iron ore smelting, for which purposes they are now being largely consumed, and they all, as a class, show on chemical analysis compositions equivalent to the bituminous coals of any other State. The coal seams are in long flat waves and vary some in quality and thickness, even in the same seams, but not more so than those of other fields. These measures besides being rich in coal, also contain,in greater or less quantities, *fire-clay, clay ironstones, blackband iron ores, building and paving stones and limonite*, and are also, for the most part, covered by a virgin forest of yellow pine, oak, chestnut, and other valuable timber.

WARRIOR COAL FIELD.

This field is now attracting a great deal of attention, especially on account of its size, its excellent coal and the slight dip of its strata. It is the most northwestern of the three coal fields of Alabama and comprises all the coal measures northwest of the Alabama Great Southern Railroad, or all the measures drained by the Warrior and Tennessee rivers. It has an area of about 7,810 square miles or is nearly ten times as large as the other two fields combined. It consists of a *plateau* and *basin* area, without any distinct line of demarkation between the two, the one gradually merging into the other. The *plateau* is the higher northeast portion and is divided into two parts by an anticlinal valley, which, as an anticlinal ridge, extends some distance down



View of Railroads from 22d Street Bridge, Birmingham, Ala.

into the *basin*, and this makes the upper or northeast edge of the *basin* concave, or forked. From the south east edge of this field there has also been cut off by a combined fold and fault a strip some twelve miles long by four miles wide, which has received the name of *the little basin*. This *little basin* is also of a *tray-shape* and is composed of strata much lower in the series than those of the surface of the other side of the fault, or of the *big basin* side which is of a *down-throw* along the fault. This field, as a whole, gradually slopes from the broad elevated plateau, constituting the northeastern portion, to the comparatively flat and low basin area making the greater southwest half. The measures thicken and become more productive in coal from the northeast to the southwest, until they reach a thickness of over 3,000 feet with about 50 seams of coal. These seams of coal range in thickness from a few inches to some 14 feet, and at least 35 of them, with a total thickness of about 90 feet, are of workable thickness, or are of 18 inches, and more, in thickness. The thicker seams, however, have always more or less partings of slate. Now, after a most liberal discount for thinning out in the seams and for every other conceivable cause, suppose that the available coal of this field would cover an area of only 500 square miles, 75 feet in thickness, and we have a block of coal 75 miles long by 50 miles wide and 10 feet thick, or 37,500,000,000 tons, enough to last for nearly 10,275 years at the rate of 10,000 tons per day. This estimate we do not believe to be half large enough. These coals are well suited for gas, steam, fuel and blacksmithing purposes, and some of them are excellent coking coals. The characteristic of the coal seams of this field is, the small angle of general dip, which is usually not more than 3 to 4 degrees to the southwest; though, from waves and other disturbances, the dip is frequently in a different direction from the above and much greater. We are convinced that, without a doubt, the Warrior coal field is destined in the near future to be the center of large coal industries and to be one of the greatest coal producing areas in the United States.

CAHABA COAL FIELD.

This is the middle of the three coal fields in Alabama, and contains the most southern true coal in the United States. It covers an area of over 400 square miles and its measures are said to be some 5,000 feet thick. It is reported to have only ten to

twelve seams of coal of a thickness of 2 feet 6 inches and over, with a total thickness of from 40 to 50 feet and a maximum available thickness of coal of only 30 to 35 feet, though some of the thinner seams are as much as 18 inches in thickness. We believe, however, that the number of thick seams is greater than this, and that the above given total thickness is not much more than half enough. Estimating, therefore, after a most liberal discount in that the available coal in the seams of 2 feet 6 inches and over in thickness, will cover 200 square miles of the field, 20 feet deep, and we have a lump of coal 25 miles long by 16 miles broad and 10 feet thick, which will weigh about 4,000,000,000 tons and will do us for nearly 1,100 years, using 10,000 tons per day. The coals of this field are of a great variety, and as a general thing, are of fine quality and hard, resisting well the action of atmospheric changes. They are remarkable for their dryness, small percentage of ash and large amount of fixed carbon. Some of them are good coking coals while others are dry burning or steam coals. The coal seams of this field appear to be unusually free from slate partings, and hence are well adapted to clean mining. Altogether, they would be taken to be less bituminous, firmer and purer than the coals of the Warrior field, but they have the great disadvantage of being highly inclined.

COOSA COAL FIELD.

This is the smallest, most easterly, and least known of the three coal fields of Alabama. Before the building of the Georgia Pacific Railroad it was far away from any line of transportation, and hence has been but very little explored. It has an area of something over 400 square miles and is known to contain, at the least, three seams of coal, of respectively 3 feet, 4 feet and 3½ feet in thickness. Supposing, as a very low estimate, that the available coal of these three seams will cover an area of 200 square miles only 3 feet in thickness, and we have a block of coal 10 miles long by 6 miles broad and 10 feet thick, weighing 600,000,000 tons, which would supply us nearly 165 years, with 10,000 tons per day. This coal is said to be a beautiful black, shining coal, rather friable for stocking but exactly suited to coking. It is also said to contain but a very small percentage of sulphur and ash.

SUMMATION.

On summing up the above estimations, which we believe to be entirely too small, we get for the available coal in Alabama, a lump 70 miles long by 60 miles broad and 10 feet thick, which weighs about 42,100,000,000 tons, and would much more than supply a demand of 10,000 tons daily for 11,500 years.

Part II.

Iron Ores—Their Marvellous Abundance and Excellence—Principal Kinds and Localities—Limestone and other Mineral Substances—Building and Paving Stones, and Road Materials—Petroleum—Mineral Springs—Lumbering—Manufacturing — Milling and Agriculture.

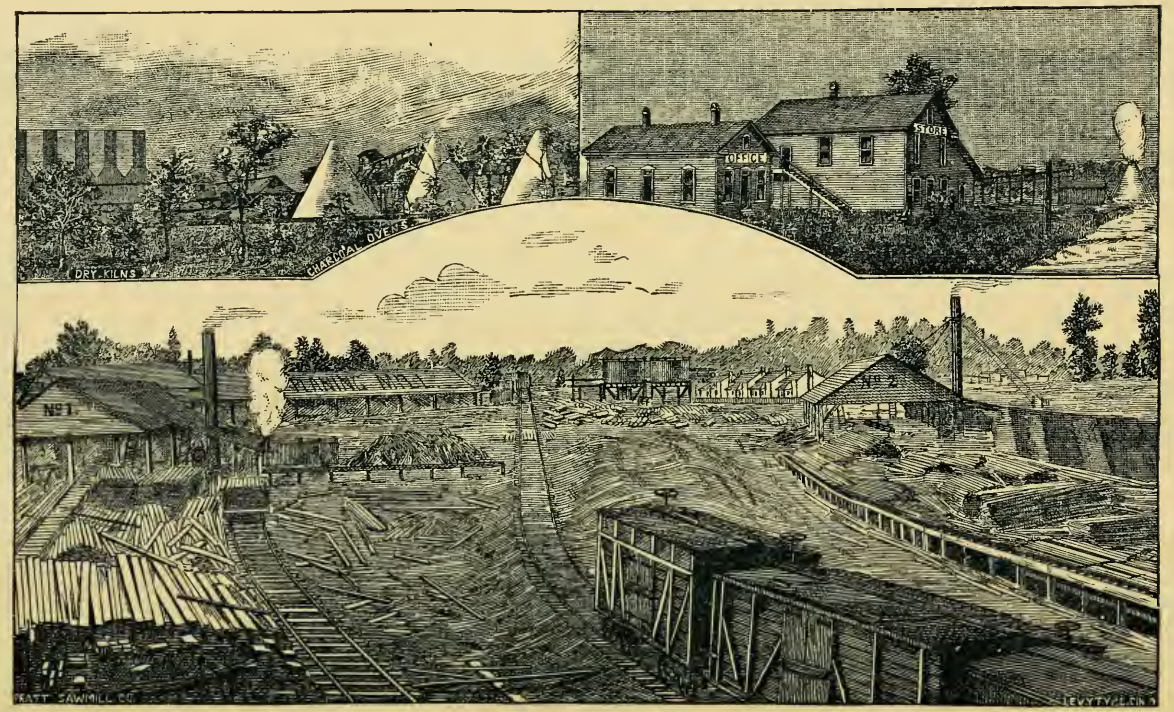
Of all minerals, iron is the most important, most useful and most influential. It seems to invest, as has been beautifully said, all countries which possess it in large quantities and which manufacture it extensively, with its hardy nature and sterling qualities. We have here in Alabama the most southern regular deposits of ores of this valuable mineral in the United States, and every facility for rendering Alabama one of the greatest iron producing countries in the world. We have hundreds and hundreds of beds of this ore scattered all over the *mountain region* of Alabama, and, we believe, billions and billions of tons still undeveloped. In fact, we do not know all that we have in this respect, it would simply be impossible to point out the separate localities where this ore occurs. We can merely deal with the principal of these localities and content ourselves with the belief that when we are done the half will not have been told and that the quantity is simply inexhaustible, and that the quality cannot be improved upon for many purposes. The principal localities in the order of their importance are: (1) *The long narrow anticlinal valleys of Central and Northeast Alabama;* (2) *The subcarboniferous valleys of North Alabama;* (3) *The Drift of Northwest Alabama;* (4) *The older or metamorphic rocks of East Alabama.* The ores in the order of their practical value are: (1) Hematite, also known as *red hematite, red iron ore, specu-*

lar ore, oxide of iron, fossiliferous iron ore, lenticular ore, Clinton ore and dyestone ore, has, when pure, about 70 per cent. of metallic iron. (2) LIMONITE, or *hydrous peroxide of iron, or brown hematite, brown iron ore, or brown ore, or brown oxide of iron,* contains, when pure, about 60 per cent. of metallic iron. (3) SIDERITE, *spathic ore, clay iron stone and black band* are names for the different forms of carbonate of iron, has in its purest varieties about 40 per cent. of metallic iron. (4) MAGNETITE, or *magnetic ore,* when pure, is 72 per cent. of metallic iron. (5) PYRITE OR PYRITES, when pure has 46 per cent. of metallic iron.

The value of an ore depends on its quantity, quality, and vicinity of fuel and material for flux. According to this criterion the first two ores mentioned above are by far the most important or valuable to us.

(1) HEMATITE, or *red iron ore,* is at present he principal ore and main dependence of the majority of the furnaces now in blast in the State of Alabama. It is highly esteemed as an ore, and in its purest forms rivals even in richness the *brown ore.* It occurs principally in the *Upper Silurian formation* along the mountainous sides and the ridges and hills of the anticlinal valleys of the State, and in the metamorphic rocks of East Alabama. These Upper Silurian rocks with their imbedded seam of red ore, are a most persistent formation, reaching irregularly along the Eastern escarpment of the Alleghany mountains from Canada, through New York, Pennsylvania, Virginia, Tennessee and Georgia, to about Pratt's Ferry, Alabama, on the Cahaba river, where they become hid from sight by the newer, overlying unconformable strata. For this whole distance, the band of red ore is said to be almost continuous, but no where developed to such an extent as here in Alabama. It is reported in New York to be 2 feet thick; in Pennsylvania, 4 feet; in Tennessee, 7 or 8 feet, and in Alabama it occurs, within 150 feet of strata, in three seams with a combined average thickness of ore of about 25 feet. These three seams of ore are separated by sandstones and shales. Alabama seems, therefore, to have of this valuable ore the lion's share. It belongs to the *Clinton group* of the Upper Silurian formation, and here in Alabama was brought to the surface by the great anticlinal upheavals. The bands of ore usually occur on both sides of our long narrow, anticlinal valleys, and are frequently duplicated on one or both sides, by folds and faults, and

if the parts here in Alabama were stretched out in a single straight line they would doubtless reach some 400 or 500 miles. They are in regular stratified layers, and from their nature and position would seem to extend down indefinitely. They are frequently very fossiliferous, though the quality and richness of the ore varies from place to place along the outcrop, and as it is gone down into. On the surface, it is richest; seeming to have been leached, becoming more and more calcareous downward, until a point is reached after which its composition would doubtless remain constant. On the supposition that the quantity and quality of this ore in Alabama are far below what we really believe them to be, or that it will form a seam only 50 miles long with an available thickness of only ten feet and an average of only 10 per cent. of metallic iron, and a specific gravity of only 3. all the way down, and we will still have for every foot of descent nearly 70,000 tons of metallic iron. It would therefore take a descent of less than six feet, even into this greatly reduced seam, to build us a railroad around the earth. The above supposition, we believe, is far within the real state of things, for the reasons that much of the available ore has 50 per cent. of metallic iron, and a thickness, in one of the seams of at least 15 feet, and a specific gravity of nearly 4. This ore is oolitic in structure, or composed of large glazed grains of various sizes cemented together and oftentimes flattened. It is most frequently fossiliferous. Its impurities are sandy and argillaceous matters and carbonate of lime. The presence of the latter is rather an advantage, as it can be made to answer the part of a flux, and the argillaceous matters are not in sufficient quantities to require the washing of the ore. It is the easiest of all iron ores to work, and yields an excellent grade of iron. This famous ore is especially well developed here near Birmingham, where, with its partings of shale, it reaches an average thickness of some 30 feet, well defined between strata of hard ferruginous sandstone, and is of superior quality both as to purity and richness. The local name, *Red Mountain*, has been given here to both the ridges and the Geological group which contains this valuable ore. It has been mined here in Red Mountain considerably for the last few years, until now its daily output must be over 1,000 tons. It is not used alone in the furnaces, but as a mixture with a small fraction of its own weight of limonite from along the anticlinal valleys below its outcrops.



Pratt Saw Mill Company, Verbena, Ala.

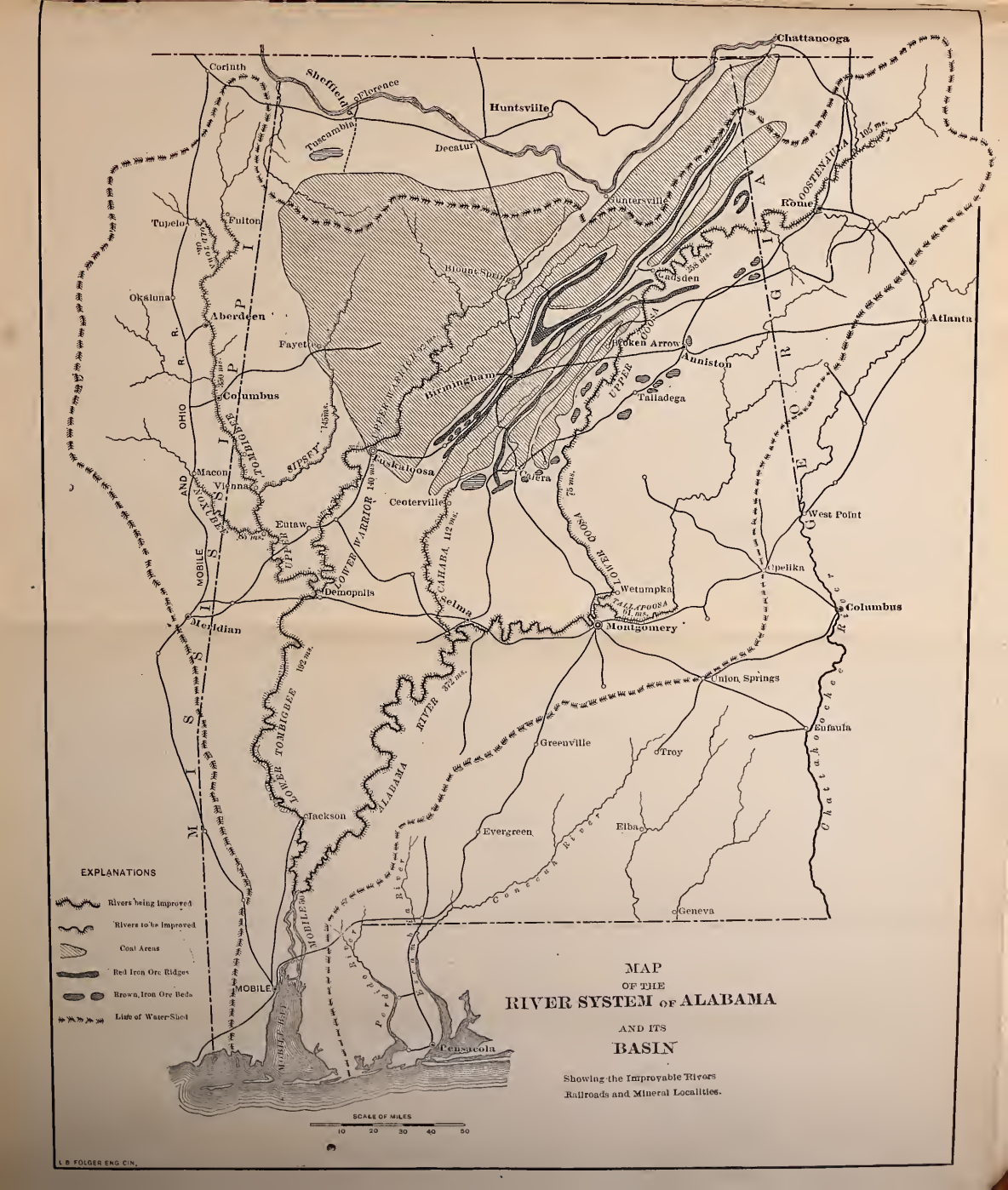
This deposit of iron ore is not only the largest in the State, but is regarded as one of the mineral wonders of the world. The hematite of the older or metamorphic rocks of East Alabama, which is called specular ore is not so well known, and though believed to exist in very considerable quantities, is comparatively insignificant in this respect when compared with the great body of ore of Red Mountain. It is a harder and more compact variety than the ore of Red Mountain.

(2) Limonite or Brown Hematite, is the most abundant and widely diffused of all iron ores. It is scattered in greater or less quantities all over the Mountain Region of Alabama, but the accumulations are especially numerous and vast in the long narrow anticlinal valleys, and in Little or Russellville Valley, and in the *Drift* deposits of Northwest Alabama.

(a) Limonite of the Anticlinal Valleys. These are the most important limonite deposits in the State, and are believed to be the result of the decomposition of the ferruginous limestones and dolomites of the *Knox group* of the Lower Silurian formation. They occur along the anticlinal valleys in the greatest abundance, and seem to be most numerous and extensive where the disturbances and hence decompositions, have been the greatest. They are found principally in the leached knolls, hills and ridges, which are from 50 to 200 feet high, occupying a strip from two to three miles broad, running up and down each anticlinal valley near its center These knolls, hills and ridges, are composed of reddish and orange colored loam, without pebbles, but with a large percentage of limonite. The ridges are frequently continuous for several miles, and have the ore-banks cropping out in more or less quantities along them. These ore-banks are not evenly distributed but are much more frequent and extensive in some places than in others. They are sometimes grouped thickly over areas of 500 and 600 acres, and again are almost wanting. In some of the richer localities, the surface of the knolls and hills, several acres in extent, are almost covered with this ore, which seems to extend through and through these knolls and hills. The ore exists in the banks as hard solid ore or as honey-comb ore or as ochreous and earthy varieties, and from small shot-ore to boulders 15 and 20 feet in diameter of 3,000 tons and more in weight. It is all good ore on account of its purity and richness, containing from 50 to 60 per

cent. of metallic iron. Though it is usually in the hills, knolls and ridges, it is found sometimes in the low grounds. It is now being used to a considerable extent with goods results, both as a mixture with the fossiliferous ore from Red Mountain in the coke furnaces around Birmingham, and alone in the charcoal furnaces of East Alabama. This ore occurs in noteworty quantities also along the sides of these anticlinal valleys with the sub-carboniferous rocks from which these smaller deposits are believed to have been derived. These anticlinal valleys are not only the best limonite fields in the State, but when this ore is taken along with the bordering fossiliferous ore, they are believed to form the greatest deposits of iron ore in this or any other country. As this ore occurs in irregular pockets its quantity cannot be easily determined, but we do know that it is such as to be well considered inexhaustible. The Alabama Great Southern and the Selma, Rome and Dalton railroads run either through or very near the main deposits of this ore.

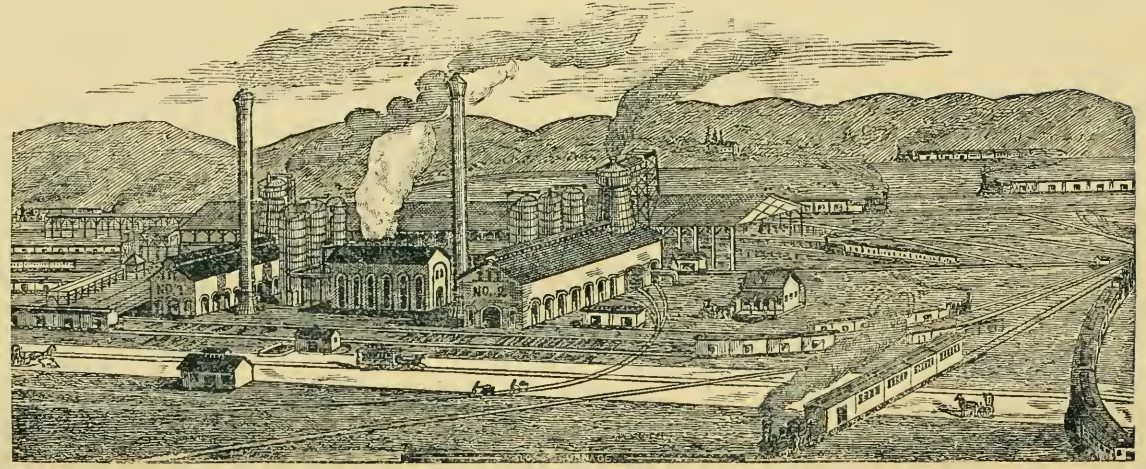
(b) Limonite of Little or Russellville Valley. This ore occurs very much like that just described, though it is believed to be derived from the disintegration of entirely different rocks; namely, the ferruginous cherty masses of the *St. Louis limestone*. It is in banks or deposits imbedded in red loam containing usually the cherty pebbles of the surface, and hence must be of comparatively recent age. These ore banks consist either of an aggregated collection of small nodules or of isolated huge boulders scattered through the matrix, and are very irregular and uncertain both as to richness and extent. Some of them are very prolific and would seemingly yield thousands of tons of ore before giving out, while others would hardly justify the working. They occur also principally in hills and ridges which are sometimes six and eight miles long. They are not regularly distributed through the hills and ridges, but are rather grouped together at intervals. The ore is of excellent quality and its iron is said to have made the best of casts. For want of transportation this ore is not now used, though it once supplied a furnace and proved its excellence. These deposits are regarded as second in importance in the State to those of the anticlinal valleys. There is no estimating, with any degree of certainty, the amout of this ore, we merely know that the quantity is very large.


Chattanooga
Corinth
Sheffield
Florence
Huntsville
Tuscumbia
Decatur
Guntersville
Rome
Tupelo
Fulton
Blount Springs
Gadsden
Oxford
Atlanta
Aberdeen
Fayette
Jacksonville
Birmingham
Anniston
Columbus
Talladega
Macon
Vienna
Tuskaloosa
Centerville
Eutaw
Demopolis
Selma
Montgomery
West Point
Opelika
Columbus
Meridian
Wetumpka
Union Springs
Eufaula
Greenville
Troy
Jackson
Evergreen
Elba
Geneva
Mobile
Pensacola
EXPLANATIONS
Rivers being improved
Rivers to be improved
Coal Areas
Red Iron Ore Ridges
Brown Iron Ore Beds
Line of Water-Shed
SCALE OF MILES
10 20 30 40 50
MAP
OF THE
RIVER SYSTEM OF ALABAMA
AND ITS
BASIN
Showing the Improvable Rivers
Railroads and Mineral Localities.
L B FOLGER ENG CIN.

(c) Drift Deposits. These deposits are distributed over a wide territory in Northwest Alabama, especially in the counties of Lamar, Marion and Fayette. The iron in the ores of these deposits, as well as that in the red loam or matrix, is believed to be from the same source as that in the ores of Russellville Valley. These beds seem to be usually surface accumulations capping the highest points of the hills and ridges through this entire section of country, though sometimes they appear to form the whole elevations from bottom to top. They all contain some good ore, but with a few exceptions the outcrops, so far as known, are made up of mostly an impure siliceous micaceous compact limonite. They have never been dug into but in a few places, hence we cannot say for certain what is hid beneath the surface below them. In several localities, however, there are extensive beds of these deposits known to be rich in the very best of brown ore. The most important of these are the deposits near Vernon, Lamar county, which supplied the Hale and Murdock blast furnace during the war. These deposits seem to form the greater part of two hills of about 25 acres each, which contain the ore scattered through a deep red soil in irregular lumps from the size of a pea to boulders several feet in diameter. In between the pockets of good ore there are patches of iron conglomerate and ferruginous sandstone. The ore is mainly porous with red and yellow ochre filling the cavities; it is said to work easy and to make a very superior quality of iron. This abundant ore occurs also in quantity in many places in the State south of the Mountain Region.

(3) Carbonate of Iron. This is the leading ore of England from which her preponderating production of iron has been made. It occurs in our coal fields as *black band* and *clay ironstone*. The *black-band* is a coaly carbonate of iron peculiar to the coal measures; we have it in several seams from one to four feet thick. It has been mined a good deal in the Warrior Coal Field and found to work very well in the furnaces as a mixture with other iron ores. The *clay iron stone* is an impure carbonate of iron occuring in balls, nodules, and kidney-shaped concretions, disposed in layers and interstratified through the shales of our Coal Measures.

(4) Magnetite or Magnetic Iron Ore. This ore occurs in the older or metamorphic rocks of East Alabama. It is said to be in considerable quantities in irregular layers and masses. It is



—SLOSS FURNACES.—

gray in color and always mixed with more or less foreign matter. It is believed to be nearly always titaniferous.

(5) Pyrites or Pyrite. This ore of iron is distributed universally over the State, and in some localities in no little quantities. It has never been utilized to any great extent here in Alabama, though it is the chief source of the sulphuric acid of commerce. This acid is largely used in the arts and in the manufacture of fertilizers; its consumption is said to mark the progress of civilization. The most frequent and largest deposits of this ore are found in our *black shale* (Devonian) and older rocks.

LIMESTONES.

We have in all the principal valleys of the Mountain Region, in the greatest abundance, the best of limestone for flux, quick lime and building purposes. Some of these limestones likely would make also good hydraulic cement and lithographic stones. Dolomitic limestone, which makes the whitest of quick lime and the best and hardest of mortars, abounds also in many of our true limestone formations.

Marble is nothing more than a durable limestone. It is found in all our limestone regions of various grades and shades of color. Those of the metamorphic region, white, gray, cloudy, and variegated in color, are quite extensive in quantity, and are the finest and most durable.

Gold. We have in East Alabama the most southern regular gold formation of the Atlantic States. These gold rocks were once quite famous for their extent and richness. They were worked then in a rough way and are said to have yielded considerable fortunes. The mines have been abandoned, but, by the use of the present improved appliances for mining, crushing and reducing the ores, they might be made to pay again. Fine or washed gold also occurs disseminated, in small quantities, through the sands and rounded flint pebbles of our *drift*.

Copper, principally as chalcopyrite or copper pyrites has been mined to a considerable extent in East Alabama.

Lead, as galena, is found in small quantities in several parts of theS tate; it has usually associated with it a little *zinc* as blende.

Manganese, as black oxide, is frequently met with in our older fossiliferous rocks associated with limonite. Heavy Spar or Sulphate of Baryta, used in the adulteration of white

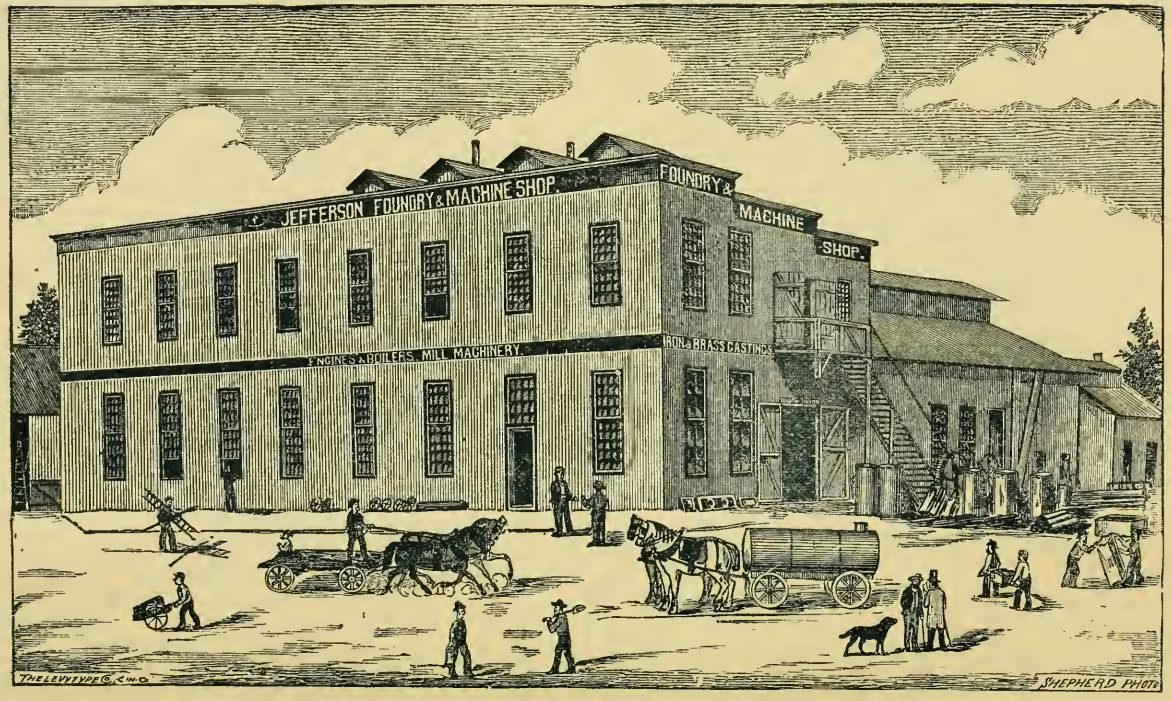
FOUNDRY
MACHINE SHOP
PATTERN SHOP
MACHINE CASTINGS
STEAM PUMPS
FIRST AVE
BIRMINGHAM IRON WORKS.

paint, is frequently seen along our anticlinal valleys. NITRE is one of the main constituents of the earthy deposits in the numerous caves of the sub-carboniferous limestone of North Alabama. These caves were thoroughly ransacked during the war and the most accessible earthy deposits were partly raised and leached. COPPERAS, ALUM, AND EPSOM SALTS are efflorescences and incrustations on our Devonian and Carboniferous shales, especially in sheltered places such as *rock houses* and caves.

CORUNDUM, ASBESTOS, MICA, AND GRAPHITE, are met with in larger or smaller quantities, in our older rocks. JASPER, Agate, Chalcedony, Hornstone and Silicified Wood, are common among the cherty pebbles of our sub-carboniferous rocks and of our *drift*. Grindstones and Millstones, of good coarse grit, abound with us, especially in our coal measures. Red and Yellow Ochres and Mineral Paint, good for out-door work, in deposits of some size, are not unfrequent, especially in our *drift* and Lower Silurian rocks. Fire Clays and Sands of the very best quality for the manufacture of porcelain and glass, occur in considerable quantities in several of our formations. The Under Clay to most of our workable coal seams makes excellent earthernware.

BUILDING STONES. Our demand for durable and beautiful building stones keeps step with our advancement in wealth and civilization, and though we are growing rapidly in both of these respects, we have enough of these rocks to satisfy the tastes of the most fastidious for a long time to come. With all of our fine building limestones and sandstones, it seems almost superfluous to speak of our other building stones. We have, however, Granite, which is regarded as the most valuable of all materials for architectural purposes, in considerable quantities in East Alabama, and we have in all parts of our Mountain Region, but especially in our drift, the best of Clays for the manufacture of the most durable and beautiful bricks, Soapstones, Gneisses, and roofing Slate, valuable for many purposes, are also found here in our metamorphic rocks.

FLAGGING AND PAVING STONES. Throughout our great coal fields we have in the greatest abundance flagstones of every degree of thickness from 2 to 18 inches, with bedding planes as smooth as a floor, and also innumerable beds of massive gray sandstones which split with ease and regularity in thin tough sheets. The yellow sandstones near our great deposits of fossil-


JEFFERSON FOUNDRY & MACHINE SHOP
FOUNDRY & MACHINE SHOP
ENGINES & BOILERS, MILL MACHINERY
IRON & BRASS CASTINGS
THE LEVYTYPE CO. CHI. O.
SHEPHEARD PHOTO

iferous iron ore besides furnishing one of the best materials for building purposes, answers also all the requirements for excellent flagging stones.

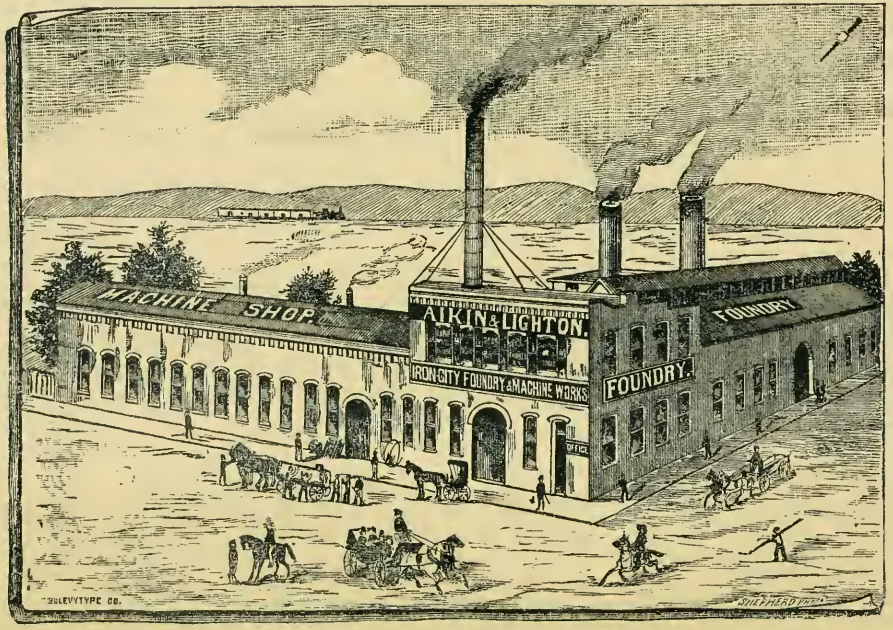
Road Materials, far superior to cracked-up limestones, sandstones, etc., for road materials, are our rounded chert and flint pebbles of the western part of the Mountain Region. These materials are in inexhaustible quantities in all degrees of fineness from sand to pebbles the size of one's fist, and are not only more durable than the broken stones of our macadamized roads, but, being water worn or rounded, are much less injurious to horses and carriages and do not give off any disagreeable impalpable dust.

Petroleum. A tarry petroleum, in limited quantities, so far as known, is one of the interesting natural products of our carboniferous and sub-carboniferous rocks. It oozes out from cracks in bituminous sandstones and limestones, and in the limestones it sometimes fills small cavities lined with calcite. Our *black shale* of the Devonian age, is also more or less rich in this crude petroleum and might be made to yield, as in other countries, illuminating, lubricating and other oils. There have never been any borings, of any consequence, for oil in Alabama, hence it is, as yet, *terra incognita*, in this respect.

Mineral Springs. No Alabamian need ever leave his State to *go to the springs*, for from the purest to the most saline, they are dotted all over our Mountain Region. The most common among them are our sulphur, chalybeate and alum springs, and of the most rare are our *tar springs*, which exude liquid bitumen, or mineral tar.

Lumbering, has been, and is, and will be for many years to come, one of the most important industries of the *Mountain Region* of Alabama. This region has forests of long leaf pine, miles square, which will yield from 18,000 to 20,000 feet of good merchantable lumber to the acre. It has also in its large growth, a great abundance of almost every kind of tree, of any economical value, among which there might be especially mentioned, on account of their quantity and size, the oak, gum, cypress and beech. The Alabama lumberman and cooper need not have any fears of want of material for a long time to come.

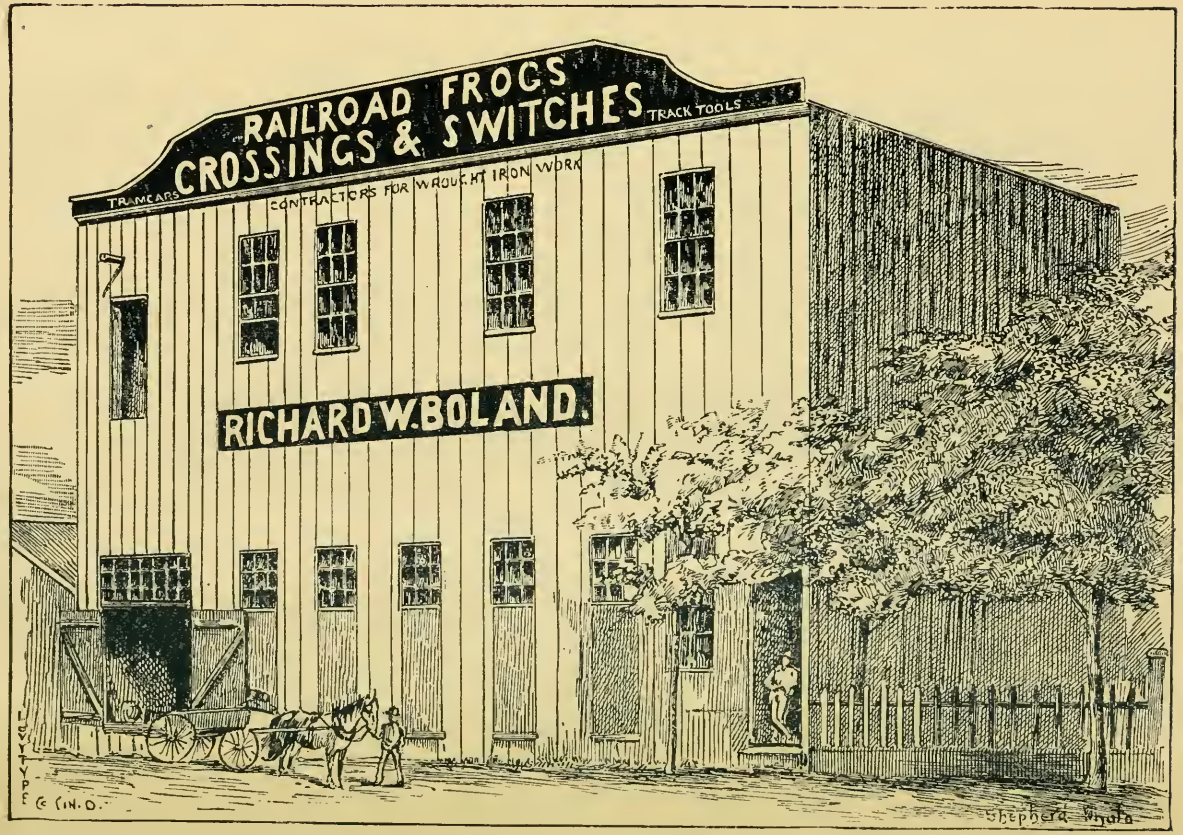
Manufacturing and Milling. There is no doubt but that those countries which have the best natural advantages will


MACHINE SHOP
AIKIN & LIGHTON
IRON CITY FOUNDRY & MACHINE WORKS
FOUNDRY
FOUNDRY
OFFICE

be the greatest centers of all mechanical industries, and such being the case, we predict for our *Mountain Region*, a great manufacturing future. The streams over the greater part of this region being fed mainly by bold perpetual springs, are almost as full in the summer as in the winter, and it is no uncommon thing to see them precipitating themselves over perpendicular bluffs from 5 to 30 feet high, affording grand sights for the eye and magnificent sites for the erection of machinery of from 50 to 100 horse power. In some parts of this region, it is especially so in the northern and western parts, it would be difficult to conceive of streams better suited for the erection of mills, etc., for they have rock bottoms and sides, great fall, and an abundance of water the year round. Thus possessing the cheap power of both water and steam, and being surrounded by all the raw materials, it takes no far-sightedness to see this section dotted all over with industries of coal, iron, cotton, wood, stone, pottery, glass, etc., etc.

Agriculture. Every interest is undoubtedly more or less dependent upon agriculture for a support, and ebbs and flows with the agricultural tide. As the soil over the greater part of our *Mountain, Manufacturing and Mineral Region* is poor, it is, therefore, a most fortunate circumstance, a *God's blessing*, that there are such productive agricultural areas on the north and south as the Tennessee Valley and Black Belt, which should, and could, always supply meat and bread for the intermediate great manufacturing section.

It seems to us that Nature, in her great combination of favorable circumstances, has left nothing out to prevent this *Mountain Region* of Alabama from becoming one of the greatest coal and iron producing, and manufacturing districts on the Western Continent.


RAILROAD FROGS
CROSSINGS & SWITCHES
TRACK TOOLS
TRAMCARS
CONTRACTORS FOR WROUGHT IRON WORK
RICHARD W. BOLAND.
LEVY TYPE CO. CIN. O.
Shepherd Wyatt

CHAPTER III.

ALABAMA MINERAL LANDS.

ANALYSIS OF ORES, COAL, COKE AND LIME.

The Government owns now in this State about 1,000,000 acres of lands denominated Mineral Lands, of which Birmingham may be considered a central point.

The University of Alabama owns 46,000 acres of Mineral Lands lying in Jefferson, Walker, Fayette, Tuscaloosa, Shelby and Bibb counties.

The railroads, crossing at Birmingham, own large bodies of Mineral Lands adjacent to their respective lines.

No special geological surveys have been made, but the reader cannot fail to arrive at an approximately correct idea of the character of these lands by studying the general descriptions of the section of territory which embraces them, as given by the State Geologist, and the Assistant State Geologist, in the two preceding chapters.

It is not true, at least at this date, that the furnace men already in business here, and speculators, have monopolized the Mineral Lands of Alabama.

When the railroad, by air line, shall have been completed from Memphis to Birmingham, and the road from Sheffield to Birmingham, and the road from Tuscaloosa to tap the Memphis and Birmingham also shall have been completed, greater explorations will follow increased facilities of transportation, and mines will be multiplied, both of coal and ores. All of these roads are partially constructed and will be completed. Two of them are now being pushed forward.

The daily newspapers, and the industrial press of the city

abound with advertisements of mineral lands for sale by private parties, and aggregating hundreds of thousands of acres, at moderate prices.

The following letter was prepared for this volume by request. Its author is well known in Alabama as a successful cotton planter, with large possessions in that line, as a promoter of railroads, and a pioneer investor in the mineral development of the State.

BIRMINGHAM, ALA., March 5, 1886.

TO THE EDITOR: In 1873 I gave the fossiliferous red ores (iron) on Red Mountain in the vicinage of this city a painstaking examination. To my astonishment I made the discovery that this mountain of ore is composed of many differing grades and classifications. I carefully cut through seven different analyses of ore, which I now describe: The first, or top quality of ore is seven feet three inches thick; the second, is eight feet thick; the third, three feet one and a half inches; fourth, one foot three inches; fifth, one foot two and a half inches; sixth, eleven feet, and seventh one foot three inches.

These deposits are separated from each other by strata of slate from ¼ to 2 inches thick.

Beneath these seven ore deposits is a bed of limestone. Between the fossilliferous ore and the limestone is yet another large vein of calcareous red iron ore, unknown to me when some thirteen years ago my examination was made. This nether ore is exposed in the cut in the mountain where Canoe creek passes through it near Springville.

Before making these explorations in the Red Mountain, I had spent several months examining the Cahaba Coal Fields. There I found thirteen separate workable seams, measuring from 3½ to 5 feet in thickness each. I took samples from seven of the number. In taking the samples I cut through from the roof to the floor.

I append an anylsis each of iron ores, limestone and coal, above described.

Respectfully, GEO. N. GILMER.

ANALYSIS OF IRON ORE FROM RED MOUNTAN MADE BY OTTO WUTH, PITTSBURG, PA., DECEMBER 23d, 1873.

	No. 1	2	3	4	5	6	7
Thickness in feet and inches	7.3.	8.	3.½	1.3	1.2½	11.	1.3
Silicic Acid	16..31.	31.62	32.04	31.13	31.16	31.91	16.22
Alumina	3.74	4.14	5.13	4.46	4.60	4.05	2.01
Peroxide of Iron	78.55.	62.45	59.97	60.51	59.87	60.32	66.80
Lime	0.68.	1.03	Trace	Tacer	.....	.....	.....
Magnesia	0.21.	0.36	.....	.....	.....	.....	.....
Phosphoric Acid	0.49.	0.42	0.45	0.45	0.43	0.45	0.38
Sulphur	Trace	Trace	.....	.....	.....	.....	.....
Metallic Iron	54.98.	45.71	41.98	42.36	41.91	42.22	46.79

*No. 1 is the top No 7 the bottom.

Analysis of Limestone Underlying the Red Mountain Iron Ore Made by Otto Wuth, Pittsburg, Pa., December 23, 1873.

Water	0.11
Organic Matter	0.07
Silicic Acid	2.13
Alumina	0.21
Peroxide of Iron	0.12
Carbonate Lime	90.60
Carbonate Magnesia	6.74
Phosphoric Acid	0.016

Analysis of Coals from the Cahaba Fields in Shelby County, Alabama, Made by Otto Wuth, Pittsburg, Pa., December 23, 1873.

	No. 1	2	3	4	5	6	7
Thickness in feet and inches	4.6	4.7	2.8	4.	2.6	6.	3.2
Water	0.23	0.30	0.18	0.19	0.21	0.17	0.42
Bitumen	32.53	31.36	32.69	31.49	33.29	25.99	31.99
Fixed Carbon	61.26	65.45	63.40	60.60	68.10	70.10	63.99
Ash	5.85	2.81	3.52	7.56	2.34	3.68	3.89
Sulphur	0.13	0.08	0.21	0.18	0.07	0.08	0.53

ALICE FURNACE COMPANY RED MOUNTAIN ORE.

Analyzed by Alfred F. Brainerd, Analytical Chemist, Birmingham, Ala., '86

Feric Oxide	73.930
Silica	19.680
Alumina	2.710
Lime	0.523
Magnesia	0.192
Phosphoric Anhydride	0.371
Sulphuric Anhydride	0.028
Manganese Oxide	0.390
Water and Loss	1.438
	100.00
Iron	51.5
Phosphorus	0.162
Sulphur	0.011
Manganese	.025

SLOSS FURNACE COMPANY, RED MOUNTAIN ORE.

Analyzed by Alfred F. Brainerd, Analytical Chemist, Birmingham, Ala., '86

Ferric Oxide	90.271
Silica	6.380
Alumina	2.460
Zinc Oxide	.070
Baryta	.080
Lime	.220
Magnesia	.230
Phosphoric Anhydride	.090
Sulphuric Anhydride	Trace
Water and Loss	.199
	100.00
Iron	63.190
Phosphorus	.040

COKE MADE BY SLOSS FURNACE CO., OF PRATT MINE COAL.

Analyzed by Alfred F. Brainerd, Analytical Chemist, Birmingham, Ala., '86

Fixed Carbon	91.163	Ash	Oxide Iron	1.152
Ash	8.667		Alumina	3.510
Volatile	.170		Silica	3.370
			Phosphorus	.032
	100.00		Sulphur	.858

LIMESTONE USED BY THE SLOSS FURNACE COMPANY.

Analyzed by Alfred F. Brainerd, Analytical Chemist, Birmingham, Ala., '86

Calcium Carbonate	96.500
Magnecium Carbonate	1.525
Silica	1.675
Phosphorus	0.016
Oxyde of Iron & Alumnia	0.300
Sulphuric Acid	Trace
	100.172

Shadwell Pitts
First House in Birmingham
Edward Cavan

BIRMINGHAM, ALABAMA,

THE MAGIC CITY.

A History of Its Rise and Progress,
Its Present Condition and Future Prospects,
Statistics of Its Coal and Iron Industries, Its Climate,
Sanitary Character and Government, Its Free
Schools and Churches, Etc., Etc.

CALDW

CALDWELL HOTEL

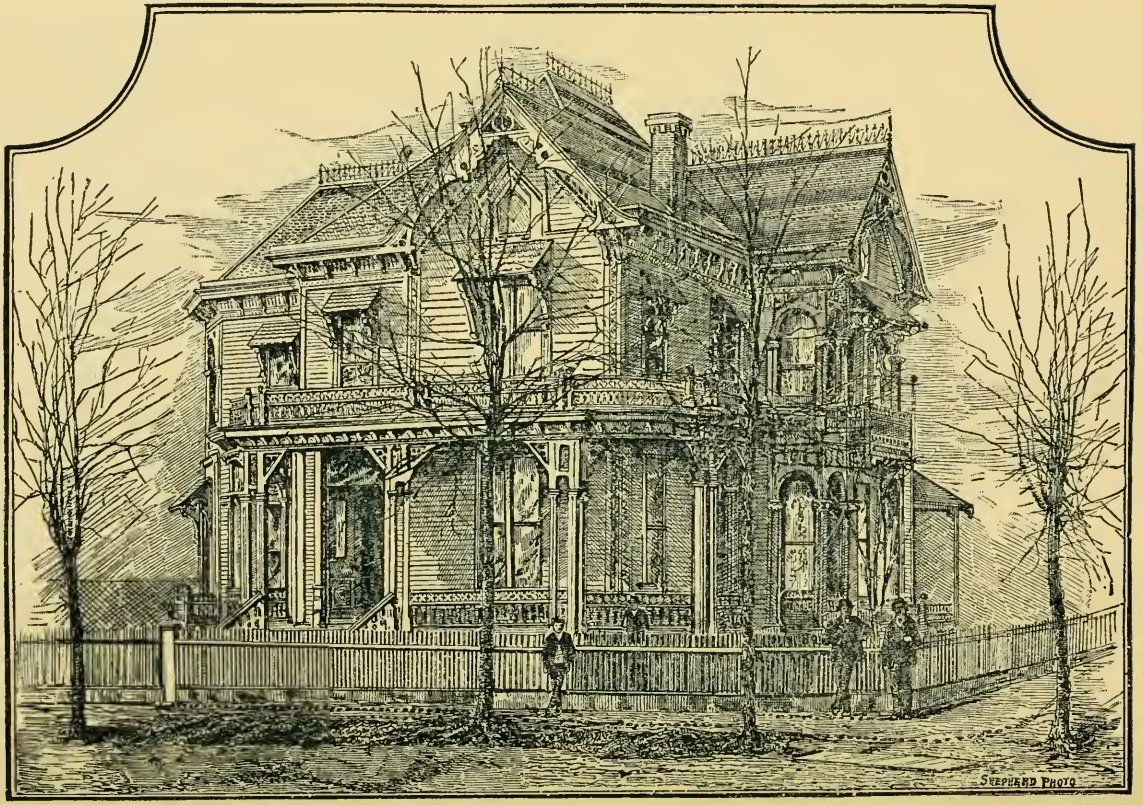
CHAPTER IV.

CAUSE AND EFFECT.

IRMINGHAM will become the workshop of the great territory bounded by the Ohio and Mississippi rivers, the Atlantic ocean and the Gulf of Mexico.

The industries developed by Coal and Iron are the richest in the world, and the localities in which those industries are maintained in greatest prosperity are fixed by order of nature. The coal and iron industries of Pittsburgh, Pa., have infused throughout that State the spirit of enterprise, which is discovered in the growth of hundreds of villages and towns, supporting a wide net work of supplemental and subsidiary manufactures of iron in innumerable forms, of textile goods, of pottery, vehicles, glass, furniture, farm implements, etc. In addition to the increased employment of capital and labor in manufactures, whose origin is mainly attributable to the iron and coal industries of Pittsburgh, the State under the same influence is traversed by numerous and prosperous lines of railroad, representing an immense amount of fixed capital, and of wages expended in their construction and rolling stock.

The agriculture of the State is second in prosperity to none elsewhere pursued, and the safety of investments in agricultural lands is one of the radii of influences emanating from Pittsburgh.



Residence of T. L. Hudgins, Birmingham, Ala.

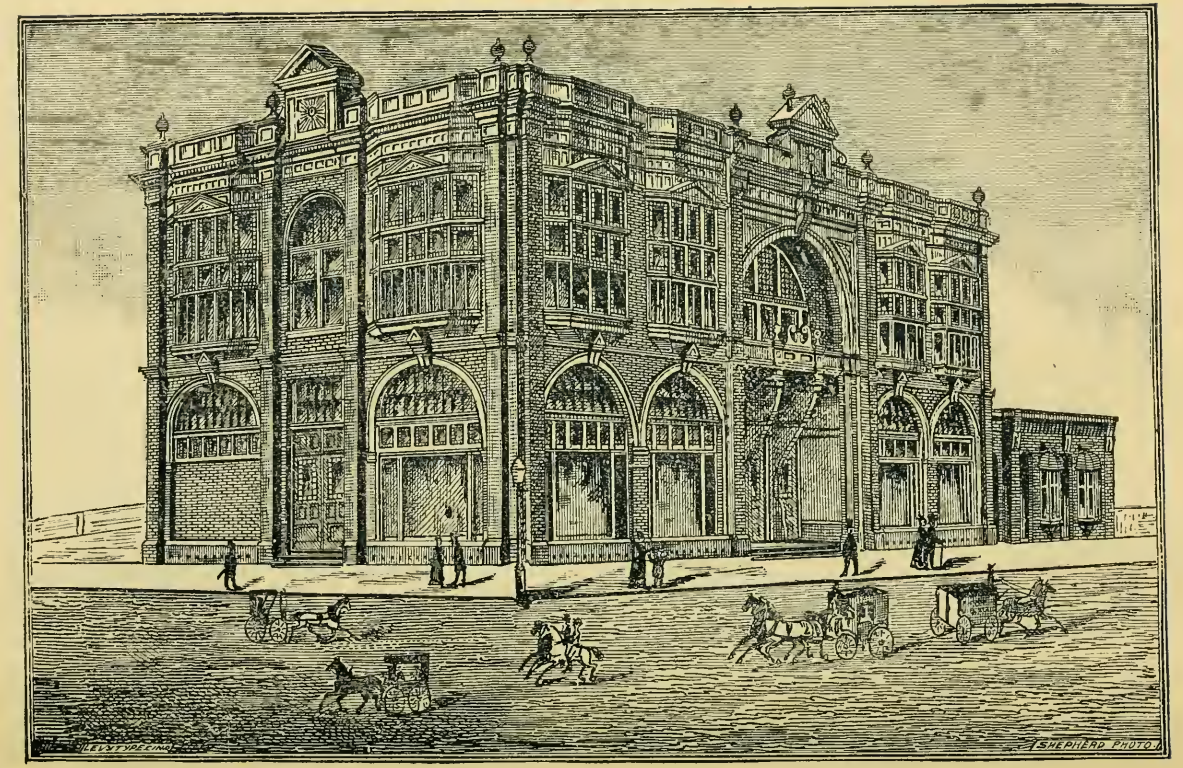
In Illinois the percentage of farms on long or short lease is shown by the national census to be one in three of the whole number of farms. The percentage in Pennsylvania is only one in five; thus indicating the superior general prosperity in the example of the greater iron manufacturing State. Illinois with a population of 3,067,871 contains near 85,000 tenant farmers; Pennsylvania with 4,282,891 population contains only 45,000 tenant farmers, the others being proprietors. The iron and steel manufactures of Illinois are but $20,545,289, that is, about $6.70 per capita of population. The iron and steel manufactures of Pennsylvania are $145,576,268, that is, about $46.50 per capita of population. The value of improved farms in Illinois is less than $40 per acre; the value of improved farm lands in Pennsylvania is over $75 per acre the average.

But iron ores used in Pittsburgh are transported over expensive lines from Michigan and from Lake Superior in large and increasing proportions; while blast furnaces in St. Louis and Ohio transport their coke from Pittsburgh, and all transport their lime for fluxing over long distances.

We shall see in the progress of these pages that all the basic elements of iron manufacture lie side by side in the Birmingham district; and that the coking property of the coal is excellent; and that the merchantable standard of the pig iron is very high. We shall see that an abundance of labor is accessible to the widest demand of the manufactures now here, or which may come to this field; and that the cost of manufacturing pig iron is here cheaper than elsewhere in America, because here all the factors which enter the industry are cheaper than elsewhere. Frosts nor floods never here for a moment of time check mining, manufacturing, or transportation. Hence the entire capital directly or indirectly employed can encounter no natural difficulties or drawbacks. The geographical isolation of the output of the furnaces and the coal pits, from existing centres of trade, is being gradually reduced

COAL IS POWER.

There is a rectangle of Scottish territory to which Ayr, Dunbar, Dundee and Toward-point may be assigned as the angles. It embraces about 5,000,000 of acres, or one-fourth the area of the kingdom. Within this division lies nearly the whole of the coal seams. Within the same lines live 1,500,000 people



Birmingham Public High School Building.

—nearly one-half of the Scottish national population. Here are manufactured annually 1,000,000 tons of pig iron. The world-renowned Clyde ship yards here employ 50,000 men, and have ordinarily in their docks ships of iron and ships of wood worth, with their engines and machinery, $40,000,000.

The manufacture of textile goods is carried on to a greater extent in the coal area of Scotland than in all the other parts of the kingdom combined; here sugar is refined in great quantities, carpets, hats and shoes manufactured; here the great Universities of Glasgow and Edinburgh and innumerable schools of art and science flourish.

Coal fuel stands as the foundation of the manufacturing capital of this era, and machinery impersonates its labor. The immensity of the physical and moral development of nature achieved by them, in co-operation, in the brief period of the life of one generation may be explained in the following examples: The first test of steam as a motor on deep water was made by the little steamer Comet launched on the Clyde, and measuring 40 feet long, 10 feet breadth, propelled by a three-horse power engine. The latest of the great ocean steamers launched from the same docks is of iron converted by coal, and measures 530 feet long, propelled by 13,000 horse power engines.

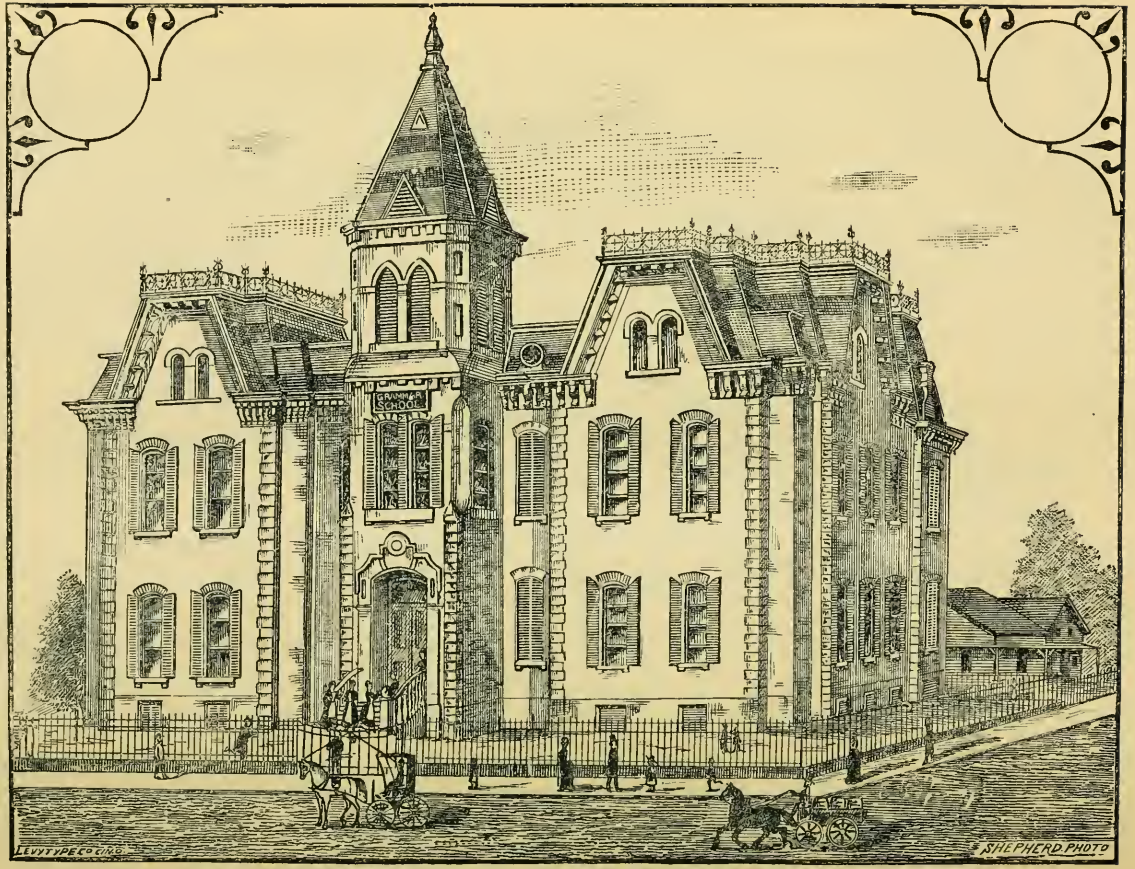
The influence of coal mines on the concentration of population is illustrated in the Nottingham fields. Leeds contains 320,000 people, Bradfield, only eleven miles distant contains 183,000, Birmingham 400,000, Sheffield 250,000, and Manchester 600,000.

The use of coal inaugurated the industrial revolution which has gone hand in hand with the advance of all known science, and with all discoveries of new principles in society and government.

Coal is the foundation of the

FACTORY SYSTEM.

This is the term applied to the co-operation of organized labor and organized capital under one direction. In the manufacturing centre of England was the little town of Burnley. Here lived Hargreaves, the carpenter, who invented the spinning jenny. Coal-made steam applied to this machine, and the power loom, which succeeded it, was the initial step in the organization of capital into great manufacturing enterprises. Organized



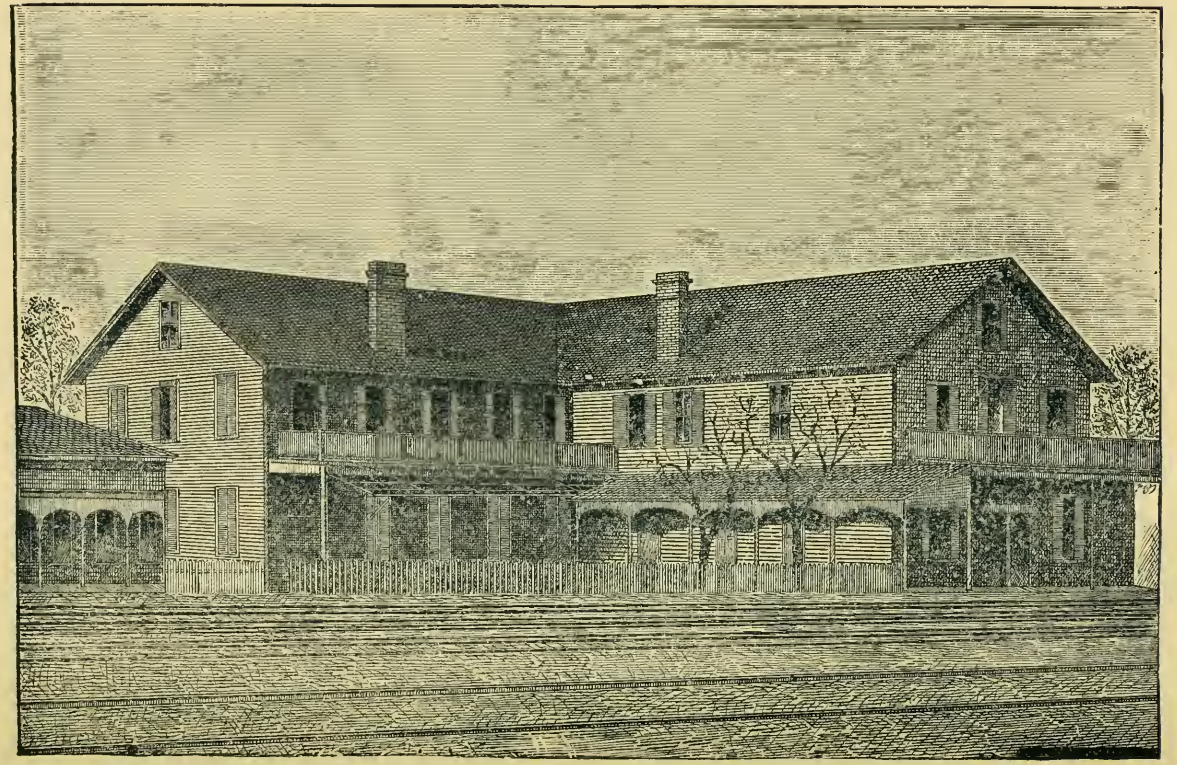
South Side Public School Building, Birmingham, Ala.

capital engaged in practical industries of all descriptions has persistently followed the methods first denominated the "factory system." In 1810, which dates about the birth of the system, England contained about twelve towns of 30,000 inhabitants. Fifty years later when machinery, brought into use there, was supposed to possess a power equal to the labor of 300,000,000 of men, England then numbered in her bounds thirty-one cities of 30,000 inhabitants—an increase of nearly 300 per cent. Increased values in lands, increase of productiveness in acres, improvement in the quality of all kinds of farm live stock, improved farm implements and machinery to lighten labor are coeval with the growth of that system. Under it the ramification of labor reaches all degrees and conditions of life. Labor has thus become so diversified and distributed that childhood and old age are included in its economies; man and woman, the skilled and the unskilled are assigned as factors in its order of development. The increase of vegetable and animal produce consumed by the manufacturer is the stay of the farmer; the increase in quantity and quality of apparel consumed by all classes is the source of occupation to the manufacturers; the betterment of abodes of the laborers prolongs life and promotes happiness and personal virtue; the widened scholastic education, provided by the State for the laboring classes, lessens the line of demarkation between laborers and capitalists, as individuals. These are all perceptible effects of the operation of the factory system. That they are eminently democratic is self-evident. Individual wrongs and sufferings will remain absolute or comparative. But political freedom has come with prosperity, and the ballot-box will preserve to both capital and labor approximately equal opportunities. The law of society can go no further than the recognition of these accomplished facts.

Birmingham is destined to be a distinguished illustration of the co-operative power of capital and labor, and of its benificent results, expanding hence into every part of Alabama.

ITS SOUTHERN CHARACTER.

First came to the valley where Birmingham sits the most potential of all combinations of capital and labor, the railroad. It had been predicted that the sons and daughters of the South had been enervated by the civilization of the past. It was foretold that when the period of transition should arrive, which



Relay House, Birmingham, Ala.

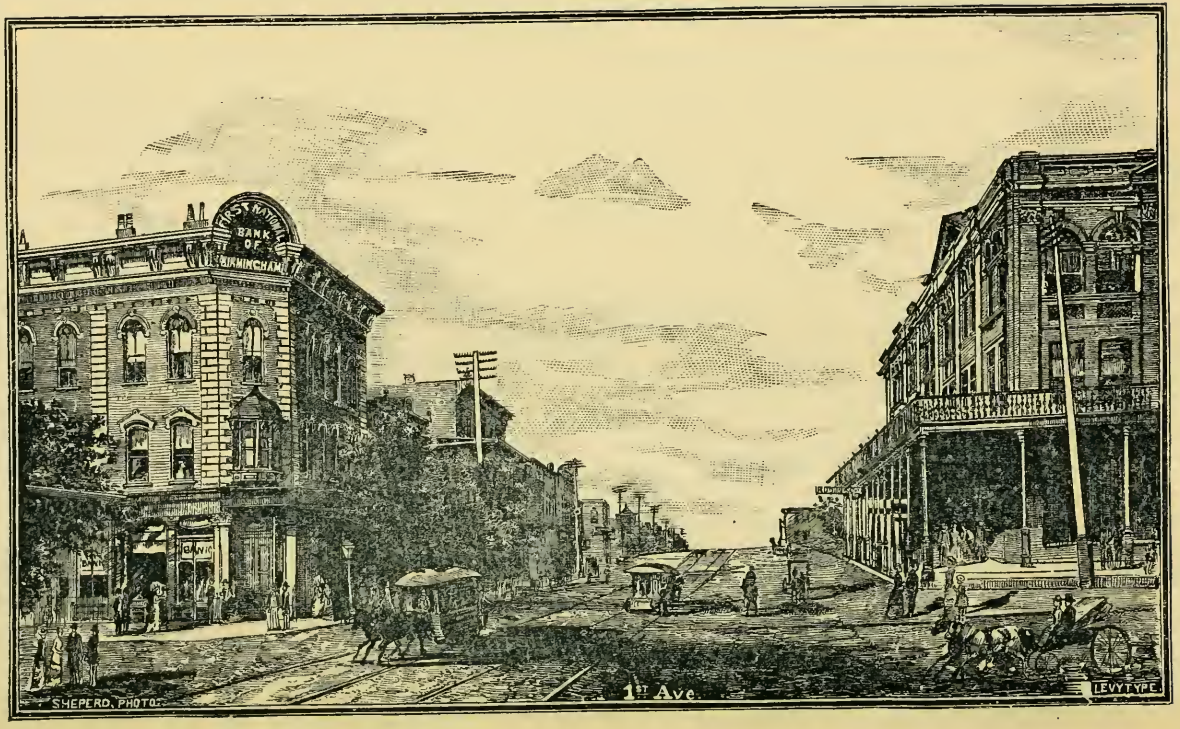
must pass the South from the old, over to the new field of action and era of thought, that the old masters of the slaves would let slip so great opportunities as had, through all ages, lay hidden in these mountains to await the coming of this day.

The Birmingham of to-day is the exultant refutation of that gratuitous slander. Fifteen years ago there was no mark on the map of Alabama pointing to Birmingham. Now many thousand dollars per day come here to buy pig iron only; $175,000 per month is paid to labor by infantile industries only; stoves, piping, steam engines, foundry outfits, furnace plants, etc., are shipped hence a thousand miles; chain factories and iron bridge factories, flour mills and furniture factories, cotton press factories and cotton gin factories are springing up. From the peaks overhanging this valley the philosophic enquirer may observe hurrying throngs of working men grading and paving wide streets constantly encroaching on the surrounding farms; and along their lines mechanics build one after another great temples of trade, halls of education, church spires, which kiss the clouds, beautiful homes, and ever leave the end of one day overhung with the unfinished work for the next.

ORIGIN OF THE CITY.

Two pioneer lines of railroad crossing on the site of Birmingham were projected and built as the result of a public convention assembled about the year 1854 at Elyton, then the capital village of Jefferson county, now two miles west of the centre of Birmingham. So wide spread, at that time, had become rumors of rocks covering the neighboring mountain sides red with hematite, and the coal which the country people would gather like stones from the surface of the earth, that announcement of a forthcoming meeting, summoned to collect information concerning these reports, was well received. Travel to Elyton from the great cotton growing region, where the wealth of the State then centered, was difficult and laborious. Nevertheless the meeting was well attended by capitalists, and by ambitious politicians as well, from all parts of the State.

This notable event was conceived, or at least greatly promoted, by the spirited and sagacious citizens of Jefferson county.


FIRST NATIONAL
BANK
OF
BIRMINGHAM
1st Ave.
SHEPERD. PHOTO.
LEVY TYPE

COL. W. S. ERNEST.

The whole county of Jefferson was duly reminded of the coming occasion, and warned of its duty. Everybody listened and took counsel. Therefore, when convention day came, and the people with it, an immense barbecue was found prepared under the great old oaks of Elyton. The logic of the post prandial orators took growth with marvellous rapidity and vigor. Canvassers for subscriptions began to scour the country. The speeches of the convention were yet fresh in their memories. The power of the railroad, if applied to the wealth in coal and iron in Jefferson county, would, they said, to the listening fireside far and near, cause the hill land to become immensely valuable, the valley to become a fortune on the hands of its owners, and would certainly build up a mighty city in Jones' valley. But neither Col. Ernest, nor any of his coadjutors in the railroad scheme, had gone so far as to predict even the location of the city which was to be.

Professor Garland then of the University of Alabama, now Chancellor of Vanderbilt University, was made president of the railroad, called, in its inception, the Northeast and Southwest Road. A good deal of grading had been done on the line when the war began, in 1861. This work was prosecuted by farmers who would take small contracts to be put through by their field hands at seasons when the crops allowed. Labor was property then, high priced and hard to command for such work.

J. C. STANTON AND JOSIAH MORRIS.

Mr. Stanton was a Boston man who became interested in the railroad after the war, and gave it great impulse. Mr. Morris was before the war, and is now, a private banker of Montgomery. It so happened, in the course of business, that Messrs. Stanton and Morris acquired the right to determine the crossing place of the South and North Road, now a section of the Louisville and Nashville system, and the Northeast and Southwest, now the Alabama Great Southern, a division of the Queen and Crescent system. These two after determining to fix the crossing point where it is now, began to enquire for lands, then in farms and forests, adjacent. There had been few transfers in time past of these lands. The titles were easily proven, the prices were low. There were of course invaluable conditions in the project ahead,

19TH STREET

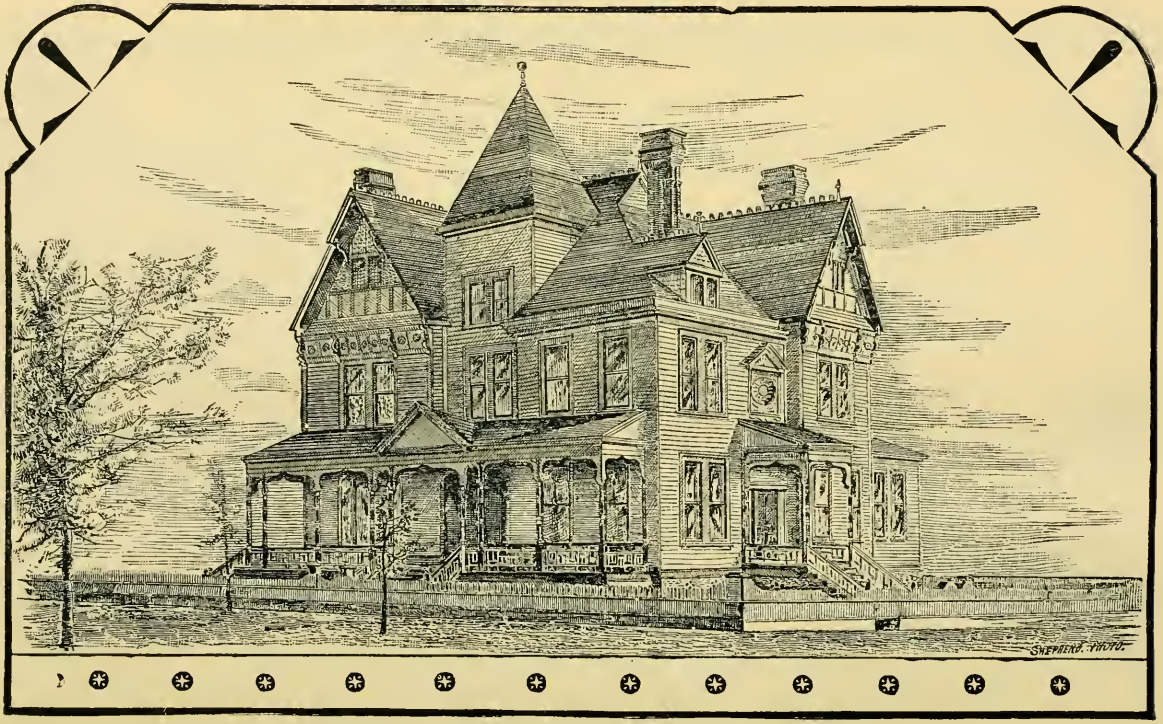
somewhere. About 1866-8 Col. John T. Milner, a man of much practical judgment and of untiring faith in the scheme of Messrs. Stanton and Morris, together with Major McCalla, both engineers one of the S. and N., the other of the Alabama and Chattanooga Railroad, began to buy land for the projectors of the town. Before proceeding far however, the engineers represented to their principals, the proposed city founders, that there would be a deficiency of water supply on the lands they were directed to purchase, being in fact those of the present site of the city. They resolved, therefore, to act in the two-fold capacity of locators of the line of railroad and of the site of the new city, whose prosperity the road was expected to promote. They determined to turn the road down Possum valley, and run along Village creek to about a point where Mr. M. A. May now lives. At, or near, the point where the railroad should touch the creek, they proposed to locate the site for the city. The work on the original line of railroad was suspended and a corps of engineers ordered to survey the Possum valley line. The new line had been located by the engineers' survey, when Mr. Stanton came upon the scene, and under protestations of Messrs. Milner and McCalla, ordered the re-establishment of the original line, and directed the purchase of the lands to proceed, as originally contemplated.

The vendors of the lands, knowing beforehand the motive of the purchasers, agreed to sell for part money consideration and part in the stock of the corporation making the purchase, thus demonstrating the early confidence of the resident population in the future of the town.

When the day came on which the transactions were to be finally closed, and titles passed to the land purchasers, Mr. Stanton, the active spirit in the project, failed to respond with his quota of ready money to meet the terms. Whereupon it was decided to drop Mr. Stanton's name and to substitute that of Col. James R. Powell in its stead.

THE ORGANIZATION.

On January 26, 1871, the incorporators had secured clear titles to 4150 acres of land in the vicinage of the present crossing of the two railroads. They then organized under the name and style of the Elyton Land Company, with Col. James R. Powell as president.



Residence of Robert Jemison, Esq., Birmingham, Ala.

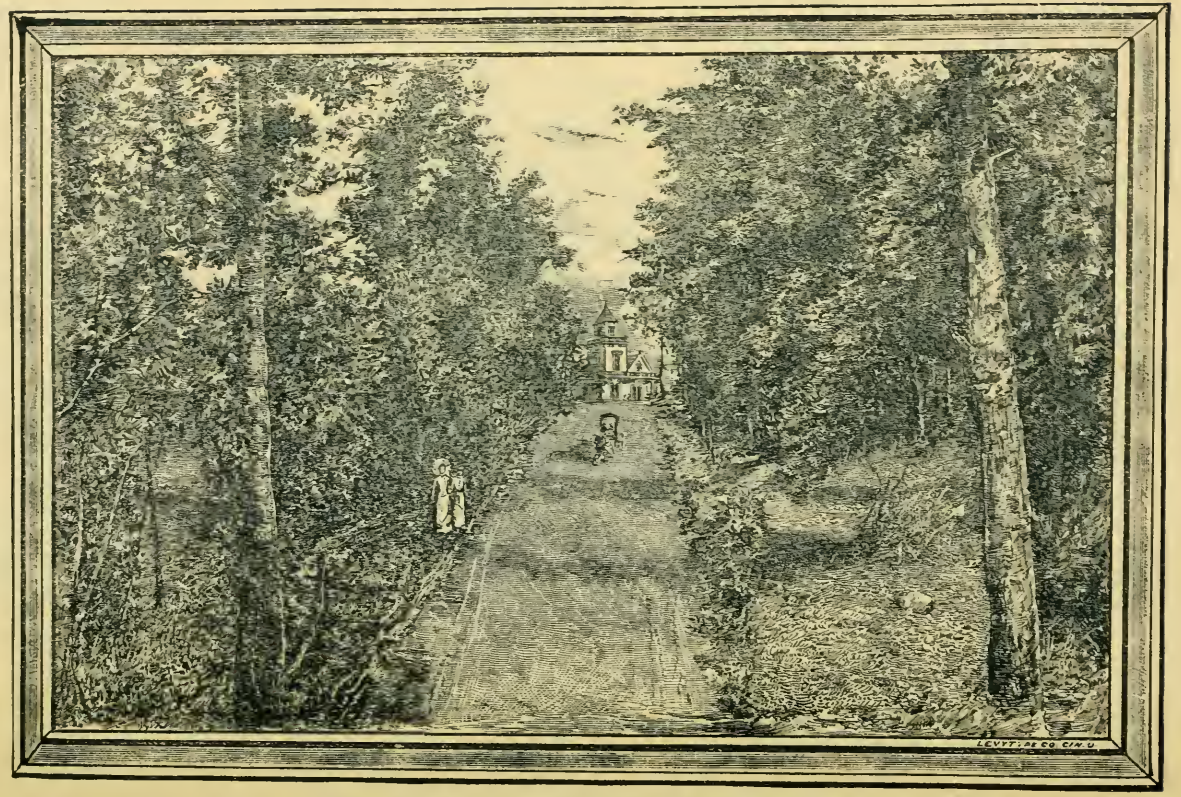
Col. Powell brought with him to the locality Maj. W. P. Barker, an accomplished and careful engineer. It was he, who under Col. Powell's instruction, laid off the city by exact squares as it now stands; broad streets crossing broader avenues at exact angles throughout the entire plan; and an alley twenty feet wide running parallel with every avenue, thus bisecting every square. The streets were designated by number, the avenues in the same order, and the alleys likewise. The most perfect street ventilation had been in the plan thus secured, before houses had been built, to endure forever.

The streets, avenues and alleys and certain blocks intended for parks were presented to the city by the Elyton Land Company, in perpetuity. The "Railroad Reservation," an endowment to the city by this corporation, consists of a wide belt of land lying on either side of the tracks which divide the city, is set aside, in the deed of gift, for railroad purposes only.

THE CITY CHARTERED.

In December, 1871, nearly twelve months after the organization of the Elyton Land Company, the city received, from Alabama, its charter. Every foot of land then laid off, or which could thereafter reasonably be included in its lines, had clear and undoubted titles resting in the Elyton Land Company. Prudence and sagacity and tact had thus far marked the work of the founders. CAPITAL and LABOR must thenceforward work in harmony together to accomplish the great results opened to their opportunity. How well these two hand-maids of advanced civilization have fulfilled their duties respectively and conjointly, the proportions of this fair city most eloquently attest.

On the day of incorporation the city numbered some 700 to 1,000 souls. Among that motley mass gathered from diverse places, and assembled here only to work, to speculate and to wait, can now be seen daily on the streets, men working, speculating and yet waiting. Not a few of these who came here to sleep under a tent or a shanty, and toil in the day with their own hands, own now beautiful homes and are the possessors of real estates bringing in handsome rents monthly, and readily convertible into tens of thousands of dollars at a moment's advertisement. There is a universal sentiment of supreme confidence in the future pervading the population of Birmingham.



Residence of J. A. Yeates, Esq., North Highlands.

FIRST SALE DAY.

On the first day of June, 1871, midway between the date of organization of the Elyton Land Company and the issue of the city's charter, that famous corporation begans its first sale of lots. The attendance was large beyond expectation. Col. Powell had done everything in his power to advertise the event. Address and adroitness in such an emergency was a conspicuous feature of his energetic nature. There was a great rush of purchasers. The South and North Railroad, reaching south from Decatur, then stood with its southern terminus many miles to the north of Birmingham. Yet in those days of abundant money, and speculative tendencies, there were even delicate ladies who, setting out from points to the north of this, came on cars as far in this direction as possible, then taking any kind of conveyance obtainable drove over the rocky mountain paths to meet the first sale of Birmingham lots. It is related that so many more female visitors attempted to attend than the adjacent country, or the transportation lines, could supply with vehicles to proceed on the journey, that some of these fair investors actually walked into the new town. The Alabama and Chattanooga Railroad, embarrassed by litigation and various troubles, was hardly to be counted on as a means of travel. An occasional train ran, but on no advertised schedule. Neither the conductor nor any passenger agent on the line could say when another train would pass from either direction, whether the next day, the next week, or ever at all. While the railroads were thus provokingly inefficient in operation, they had naturally driven off the old stage lines which had so long and faithfully, under Jemison, Ficklen, Powell & Co., served the traveling public in all directions from Elyton.

The first lot bid off was the corner 1st Avenue and 19th street. It brought

ONE HUNDRED DOLLARS,

and is 50x100 feet. This lot is yet owned by the original purchaser, Major A. Marre, a citizen of the town. Probably ten dollars per foot surface measure could not buy the land to-day. On the opposite corner now stands a splendid brick Opera-house, one of the largest and best appointed in the interior cities in the Union, owned by one of the early settlers, Mr. Frank P. O'Brien.

Mayors office
Birmingham Ala
Feby 8th 1872

W. J. McDonald Esq
of the Board of Aldermen

Dear Sir

You are hereby appointed Acting Mayor, during my absence from the city—

Very Respectfully
R. H. Healey
Mayor

February, 1872, an enumeration of the buildings of the town showed 54 brick stores, 125 frame stores, and 250 frame dwellings.

The auspicious circumstances of the birth and life of the young city continued until June, 1873. At this time

CHOLERA

became epidemic. A large proportion of the population then here, quickly abandoned their business and fled. None came to take their places, stores were closed and their proprietors became invisible.

Following close on the abatement of the terrible epidemic came news of "black Friday" in September of the same year. The financial panic originating under that name in Wall street, New York, swept with relentless sway over the entire Union. The banks every where practically went out of business. Those who had deposits must buy their own funds at a heavy discount, and lucky were those who could even on such oppressive terms regain any part of them. An Alabamian happening in New York and having some thousands in hand, was beseiged by reputable brokers, with tears in their eyes, for the loan of his money for a few days, at one per centum per day.

The young bantling of the Alabama coal and iron district felt these shocks in close succession, pined and ceased to grow. The speculators' and real estate agents' occupations were gone, and besides the hope of these there was nothing to go.

THE FIRST PULSATIONS OF RETURNING LIFE

were felt in the winter of 1877-8. Old offices began to re-open, strange faces began to appear at irregular intervals on the streets. As the autumn opened more came and stayed longer. Limited enquiry could be heard for lots, an occasional order went to a building contractor. On November, 23rd, 1880, the first furnace erected near the town, "Alice No. 1," went into blast. The output proved to be excellent in quality; the adjacent coal proved to be convertible into the best coke; the limestone, lying in great abundance, hard by the ore and the coal, was good flux. Cheap iron manufacture became a thoroughly deducible result from Birmingham materials, and Birmingham was made secure of a destiny. The town bounded forward by leaps; furnace after furnace followed; rolling mills employing hundreds of men were

NATIONAL
BANK
1885
BERNY
NATIONAL
BANK.
LEVYTYPE.CIN.O.
SHEPHERD. PHOTO

established; iron manufactures of various kinds suddenly and continuously came forward. One alone now, of several coal mines in the vicinity of the town, may put out 2,500 tons daily, market the output and leave orders unfilled. Neither the furnaces or the rolling mills can supply their orders, running as they do, night and day. Splendid brick structures three and four stories high and elaborately ornamented adorn the streets. Four handsome brick banking houses are here, one of which is a Saving Bank, owned and exclusively operated on a capital paid up of $50,000, by a man otherwise a large property holder, who, in laboring here, earned all he possesses. Street cars as handsome as the best seen in New York cross the city at every point of the compass. The streets are lighted by gas and electricity. A census completed about January 1, 1886, shows a population of 21,763 within the city bounds, or who, in sight of its spires, pass from their suburban homes to the city daily. There is a public school system maintained in the city unsurpassed in merit. There is a religious tone prevailing which fills every church every Sunday to overflowing.

These facts are only generally descriptive. Good health, good order, good morals, are invaluable to a young city, even from an advertising view. But the claims on which Birmingham builds her sanguine expectations are set forth in the preceding chapters of this publication. They show from geological facts, incontestably, that no other part of the United States can rival Alabama in the production of cheap iron. The Birmingham district is capable of making a greater output of pig iron at lower cost of production than any other part of the Union. There remains the economic question of

TRANSPORTATION.

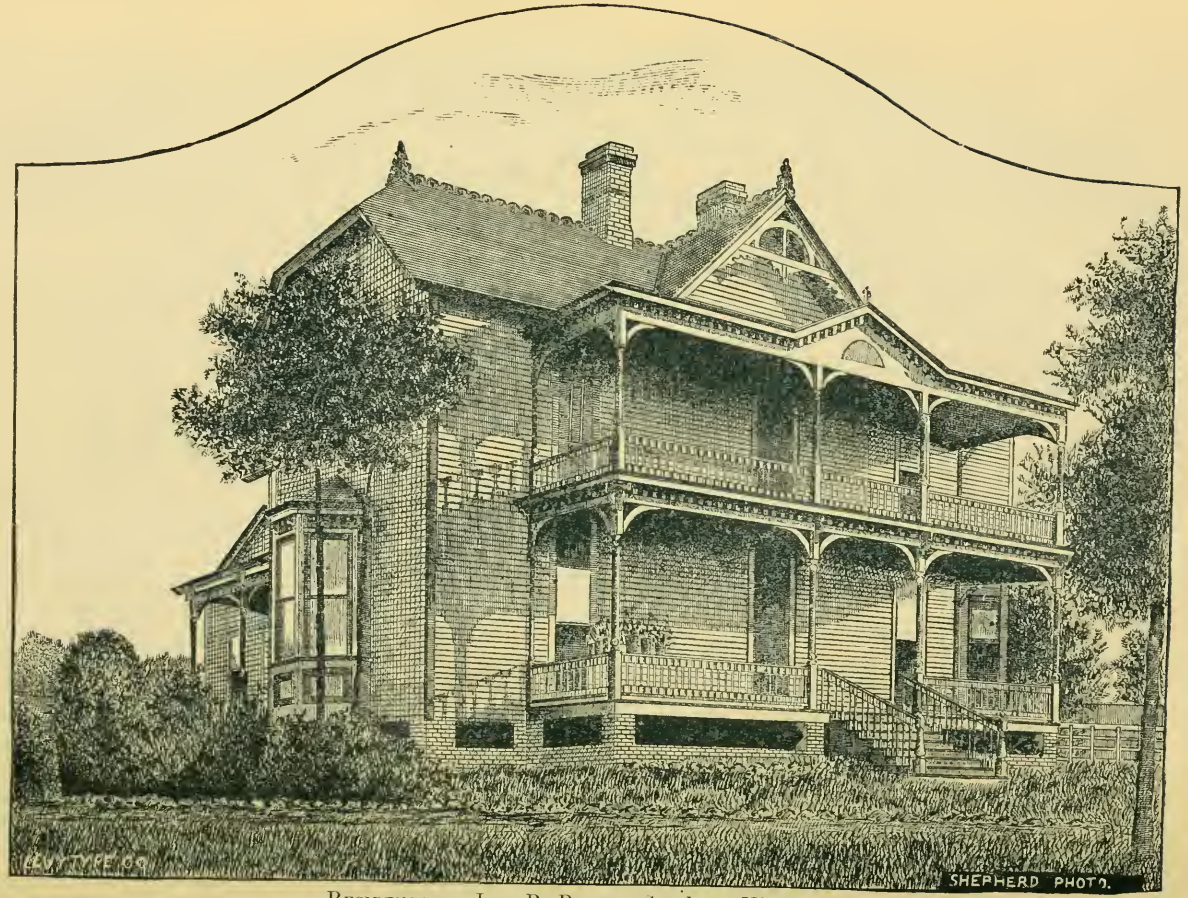
A glance at the navigable waters of Alabama will discover a remarkable commercial incident in the geography of the State. There are sixty-six counties, and more than forty of them are touched or bisected, by streams already navigable for great distances, and needing only improvements insignificant in cost in contemplation of the commerce in easy reach of them, to greatly increase their carrying trade. Mobile is the radiating point of the natural commercial ways of Alabama.

In the year 1872 Major Walter McFarland, U. S. A., attached to the Engineers, made a survey by order of the Gov-

The Florence Hotel, Birmingham, Ala.

ernment, with a view of ascertaining the practicability of a canal to connect the Tennessee, near Guntersville, with the Coosa, near Gadsden. Nearly twelve months was spent in testing the capacity of the feeders to such a water way, and in determining the cost of its construction. The report of the Engineer may be found on page 520 of the Army Engineer Reports for that year; and it appears entirely within moderate cost to perform the work, thus that water connection with the rivers of the entire Mississippi River Valley east of the Rocky mountains may be had with the mineral wealth of Alabama by a short canal of no great engineering difficulties. This circumstance must greatly magnify the conditions of commerce in that wealth. The Coosa penetrates the coal seams and iron deposits; the Tallapoosa is lined on either bank by gold, slate and tin mines, and by the finest clay for pottery and fire brick; the Cahaba cuts its way through marble fields of wonderful richness and unequaled variety, and taps some of the greatest of the coal seams and iron ore beds; the Warrior literally is a stream rushing to the sea over a coal bed, and in full view of mountains of red hematite iron.

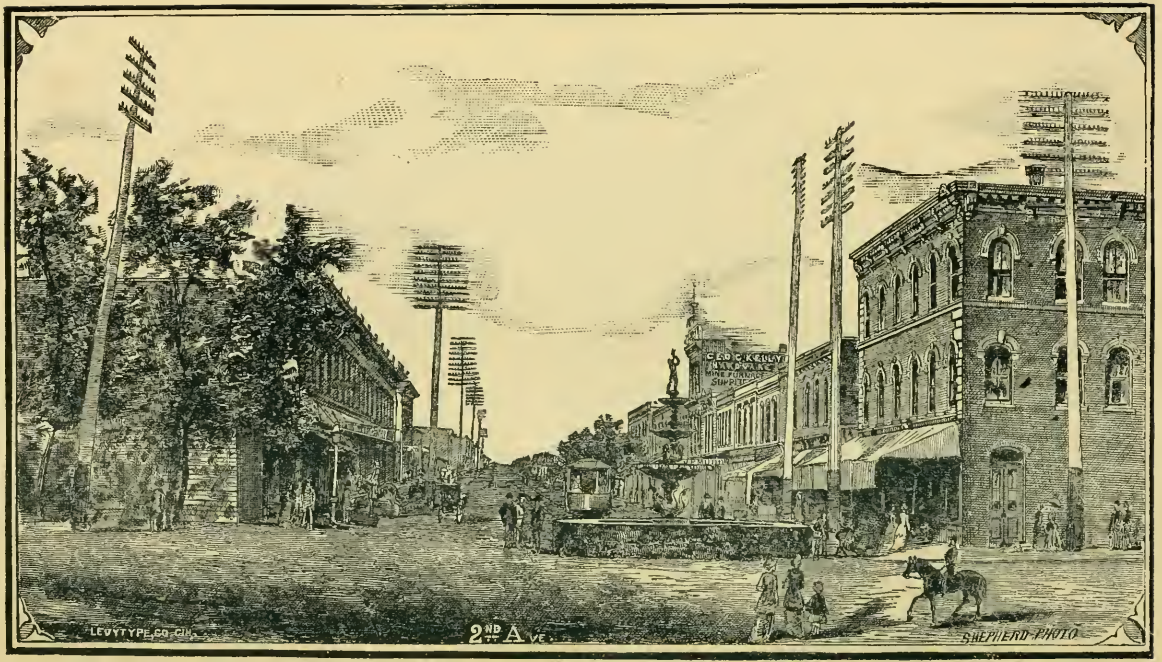
Water lines, as natural channels of commerce, will inevitably rectify any disposition to abuse of power by artificial lines. Nine railroads from every point of the compass will soon connect Birmingham with all the rivers of Alabama, and with the Mississippi at Memphis by air line, and with the Chattahoochee at Columbus, Georgia. In this fact the astonishing position of Birmingham as a distributive center of trade is made manifest. The advantages of a wholesale trade equal to hers are seldom contained even in the promise. A rich agricultural country surrounds the city at 100 miles distance; the valley of the Tennessee and the whole of the western part of Tennessee along the Tennessee river; the prairies of Mississippi, and the swamps of the great river; the prairies of Alabama, and the timber region near 5000 square miles, above Tuscaloosa, are its natural support. All of these sections can find no center of trade more accessible to them, or where money would be more abundant than Birmingham. The steady, rapid and perfectly secure growth of the iron industries and the coal trade here will be followed by a banking system as solid as the metal which supports it, and thus markets will be steady and



Residence of Jno. B. Boddie, Southern Highlands.

prices rule low in evidence of mutual confidence of the factors in business. Industries covering a territory so vast must be diversified, and in diversity of manufactures required to supply the markets will be found the life and vigor of trade. The great cotton plantations on all sides, and extending for hundreds of miles,will supply in the future as they have done in the past, at a days notice, a never failing complement of cheap and desirable labor.

The unequaled mineral wealth of Alabama is the proposition ; the immutable and incalculable growth and prosperity of Birmingham is the corollary. Each succeeding year of the world's growth widens the uses of iron. Iron ships there are for the sea, iron roofs to our houses, iron roads for the iron engines, iron bridges, iron fencing around our fields, iron steps to our doors, iron hydrants, iron binding to the very books which describe the manifold virtues of the metal. Therefore, he who would seek information concerning Birmingham, need not go far. The inherent value of iron proven, the answer is plain. The "bad years" for iron reported elsewhere have shaken no iron industry here for an instant. Here lies the fast maturing center of the iron industry of the American continent.


LEVYTYPE CO CHI
2ND ST AVE
SHEPHERD-PHOTO

CHAPTER V.

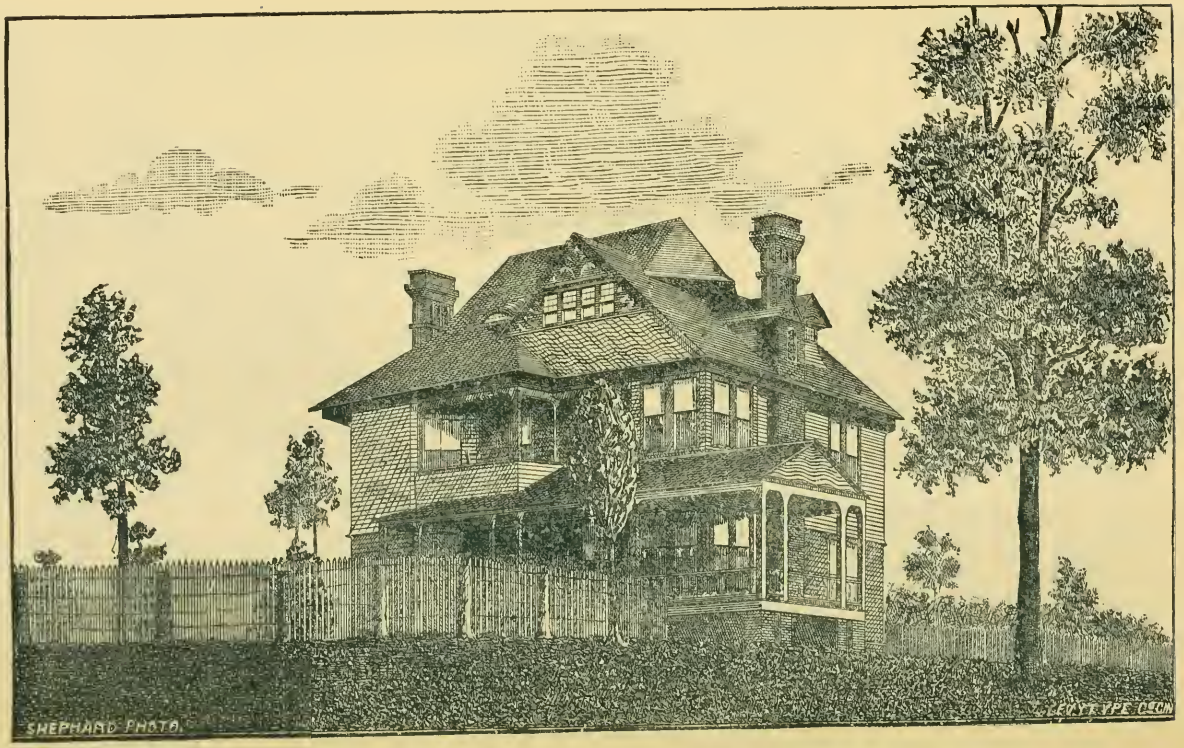
A CORPORATION WITH A SOUL.

THE ELYTON LAND COMPANY.

This most influential corporation of Alabama was originally organized to build a city, and is therefore older by some months than the streets and avenues of Birmingham laid off under its auspices. Its nomenclature may be curiously traced through a land grant made as far back as 1820. At that date the county of Jefferson was organized by the dismemberment of the county of Blount. At this time a Federal land agent, Mr. Ely, from Connecticut, on duty in this part of the country, gave Jefferson county the quarter section of the land in the midst of which the Court House and other public buildings were erected. Hence the capital village came to be named in honor of the donor of its site, Ely-ton

The object contemplated by the organization of the new company was not consistent with the prospects of continued life to the village, only a mile or two distant from the city of the future, and from which the company strangely took its name. The Elyton Land Company, however, justly claims urban instincts. Certain it is, it claims to be the progenitor of the *Magic City*, and to feel a lofty pride in its offspring. Apart from sensations of satisfaction which are prone to follow the consciousness of faithful effort, the Company seems ready to meet all congratulations with the acknowledgment that, *'there's millions in it.'*

The Elyton Land Company was incorporated under the general laws of Alabama, with a capital stock of $200,000. Mr. Josiah Morris, as we have seen, then a private banker of Montgomery, agreed to advance the money to pay for the lands purchased by the Company at that date. In fact all the convey-



Residence of A. S. Austin, Woodlawn.

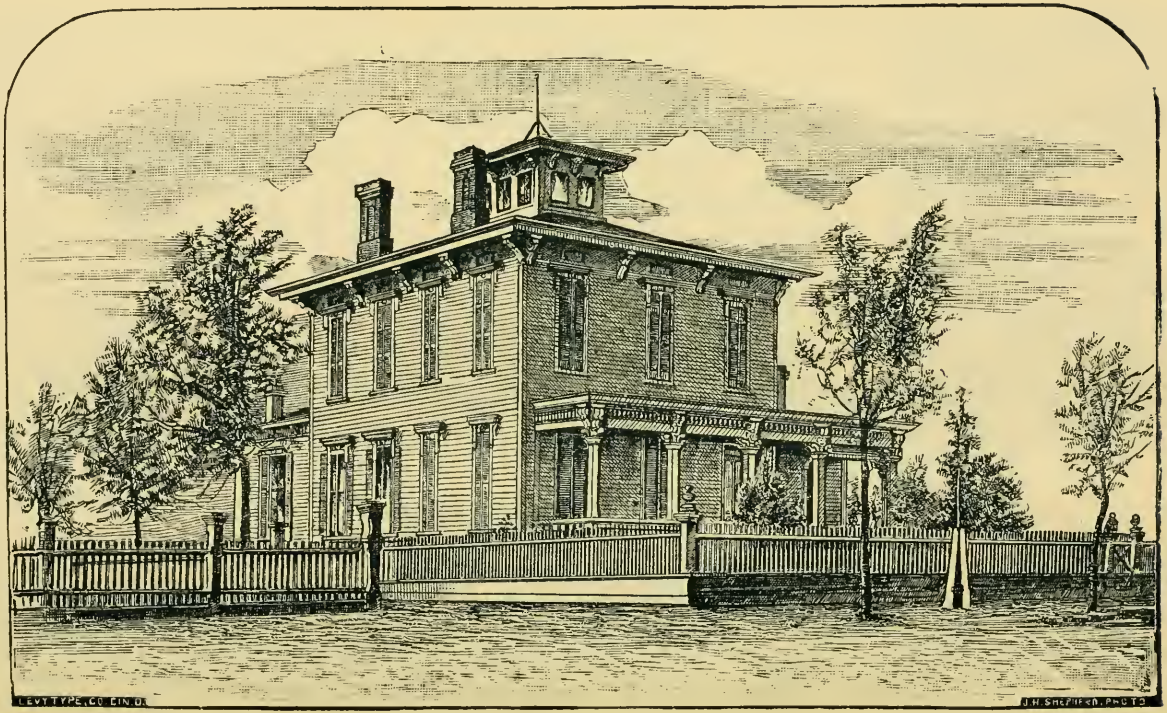
ances, transferring the various parcels of land from many original owners, were made first to Mr. Morris. Afterwards the titles were conveyed by him to the Company. Thus Mr. Morris at one time actually owned the 4,150 acres of land now occupied by the city and the suburbs.

The corporation having organized and received its charter from the State, and declared the motive and aim of its life, the next step was to raise up a man to build a city.

The Scripture declares that through wisdom is a house builded and by understanding is it established. The Company sought to apply the force of the proverb to many houses. We will see how happily both wisdom and understanding were reached in the selection of Col. James R. Powell to be the head of the Company, and how, on his broad shoulders, securely rested the destiny of the city of the Elyton Land Company.

Many, varied, and unanticipated were the difficulties encountered in the prosecution of the builder's plans. The Company had invested every dollar of the proceeds of the sale of its capital stock in lands. These lands constituted the sole resources of the Company. Besides these it owned literally nothing, and in the market value of these lay its whole life and strength. The city of the future must stand on these lands, and to exist at all it must be largely built up from the proceeds of their sales. But in the womb of Time lay Birmingham; the hand of Destiny was to bring it forth.

To erect buildings on the red hills of an old farm, and to bring to them resolute and hopeful inhabitants, was the work before Colonel Powell, President. In the execution of this scheme began the splendid career of the Elyton Land Company. Founded in wisdom and understanding, its labors have fructified into a grand realization. A multitude of "houses" have followed in their wake. From the North, East, South and West an ever-lengthening line of commerce centers here, where the Company placed its purpose. Railroads from afar off, with great cities as the sources, are built, and being built, to this objective point. The commerce of the world rises up to demand that water ways penetrating from the sea to the foot of the mountains overhanging Birmingham shall be made open routes to the riches buried in their sides. The promise of the State of Alabama lies in the building of the city of the Elyton Land Company. From this



Residence of Wm. Berney, Birmingham, Ala.

spot must flow the current of energy to vitalize the State and rehibilitate her glory.

To build a city became the established policy of the Company with its first breath of life. The execution of this policy is recited here circumstantially to show the symmetrical form of the co-operation of capital and labor developed in the realization of the city.

To every settler who would build a house to live in, or to do business in, the Company allowed the price of the lot selected by him to be fixed by the purchaser. The immediate operation of such a a policy was to dispose of much choice property at insignificant sums. The treasury of the Company was very slowly repleted by it until long after the lots had become highly valuable to the purchasers. The major part of the original purchasers are living, citizens of the city at this day, holding here a store of confidence and enterprise which enters its daily growth.

Funds, however small, did accumulate in the Company's treasury, and were speedily returned to the benefit of the city, in some form. Among the earliest outlays was the building of the

RELAY HOUSE,

a two-story frame hotel, erected on the line of both railroads. This building furnished plain but comfortable quarters for the visitors constantly coming to explore the opportunities so vigorously advertised over the world by the schemes of the Company. In addition to the cost of the hotel, the company opened and drained streets to the expenditure of $7,000 at this date.

The city rapidly acquired reputation, houses and population. But the prediction of Messrs. Milner and McCalla, Engineers, was amply verified, and the supreme metropolitan want—a full supply of water—began to press heavily. This was the first perplexing trouble that overtook Birmingham. It aggravated the outbreak of cholera and resulted in checking the growth of the city. While not a small proportion of the early comers to the town were, it must be allowed, small consumers of pure, unmixed water, nevertheless the difficulties of the occasion seemed fatal. The city sat in an anticlinal valley over rocks so perpendicularly stratified, that rain water seemed to go through to China without respect to the wells dug from this side of the earth's surface to find it. The infantile city cried boldly for "water," knowing not how to get it. Of city resources equal to the demand,

FIRST NATIONAL
BANK
OF
BIRMINGHAM
20TH STREET.

everybody knew the futility of the prospect. The population at last could better afford to act on Engineers Milner's and McCalla's plan, put their houses on wooden rollers pulled by mules and move down to Village Creek, where, some two miles off, there was a limitless supply. They would not be taxed to bring the creek to their doors, this was certain, though high taxation was then a political virtue.

So at this doubtful period of the career of the Company it discovered the necessity of building extensive

WATER WORKS,

for the support of its offspring, or, standing idly by, see its own impotent efforts fail to save it from a consuming thirst.

There are doubtless local conditions when large investments in city water works are sought by capital. To supply a city of 10,000 to 20,000 inhabitants with the needed quantity might be an example of profitable outlay of cash. But when the question presents itself to a struggling corporation and invites the expenditure downright of $100,000, coupled with the other condition of a pledge of all its resources as security for the loan of the money, in order to supply a town of 1,000 people, living in portable wooden houses, liable to be carted off from the Company's hydrants, placed at their doors, at any hour of the day or night, it required wisdom and understanding so deep and broad to persuade the Company to build the works that the marvel is the town escaped premature death from thirst.

The policy of the Company prevailed. *Nulla vestigia retrorsum* was its Shibboleth. But for years it verily seemed that this step of resolve would be its last step forward.

BANKRUPT.

Its backbone seemed to have been broken by the burden of completed water works. The cost must be met, the depletion of the population of the town, (to whose consumption the water was to be supplied) by cholera must be borne, and the financial revolution, not yet spent, of 1873, must be survived. Under these fearful burdens the Company struggled along until the spring of 1875. At this period of its history it had reached the point of debility and decay at which its property, if sold at auction for cash, would have fallen short of meeting the liabilities.

Without money and without credit, the Company was attacked by suits brought before the Courts to recover the $100,-

FIRST NATIONAL
BANK
OF
BIRMINGHAM.

000 it had put in the water works. The Secretary's desk was attached for debt. Adverse judgments, if rendered, in these suits, would sweep off the last vestige of its property, and delay indefinitely the building of the city.

In this emergency, the stockholders of the Company met to consider the dilemma. What could be done? To borrow money to pay its debts for borrowed money, was impracticable at the outset. Destruction seemed to walk rough shod over the morning of its prospects. Outside relief being without the question, succor must only come from within the organization itself. This could not help affairs much, because the stockholders were all Southern men in active business and whose securities were fearfully weakened by the pervading financial crisis spreading over the whole Union.

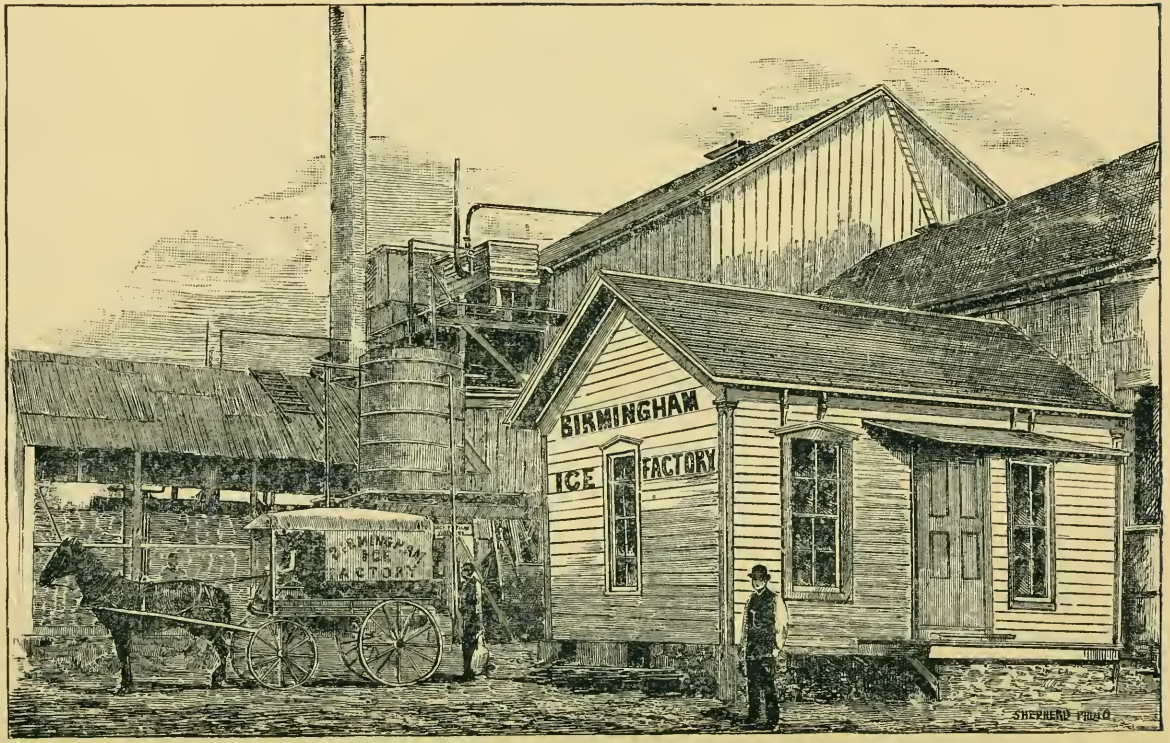
The outcrop of the meeting was, a daring move to rescue the Company from impending destruction and extinction.

A resolution passed which authorized the Company to issue its bonds to be secured by first mortgage on its entire property, to an amount sufficient to consolidate its entire indebtedness in these bonds. Each stockholder then agreed to buy a share of the bonds proportionate with the amount of his stock. This resort relieved the Company from the suits brought against it in the Courts, and prepared it to abide the coming development of the city when water might be in demand, and water bills should be paid.

SIGNS OF LIFE.

Colonel Powell resigned the Presidency at this juncture and Dr. Henry M. Caldwell, then a comparatively young man, a native of Alabama, full of energy, self-reliant and cautious, succeeded to the administration of the Company's affairs; since which day he has acquired the widest practical influence in the future of Alabama wielded by any one of her sons, by virtue of this office well filled.

For two or three years after the occurences here recited in the history of the Company, it remained in almost a dormant condition. Scarcely enough money circulated through its business to meet the interest on its bonds. Its stock was severely let alone in the market. The stock could only accomplish a transfer by the forcing put down on the separate shares of the more timid, or more needy, original holders. Whenever a sporadic sale could be effected by this kind of pressure, it was gotten off


BIRMINGHAM
ICE FACTORY
SHEPHERD PHOTO

in small amounts at $18 to $17. Twelve hundred and fifty dollars invested in it, by a Montgomery purchaser, about this time of depression, sold in November, 1885, at public outcry at the Court House in Birmingham, after spirited bidding, at $7, for one of face value.

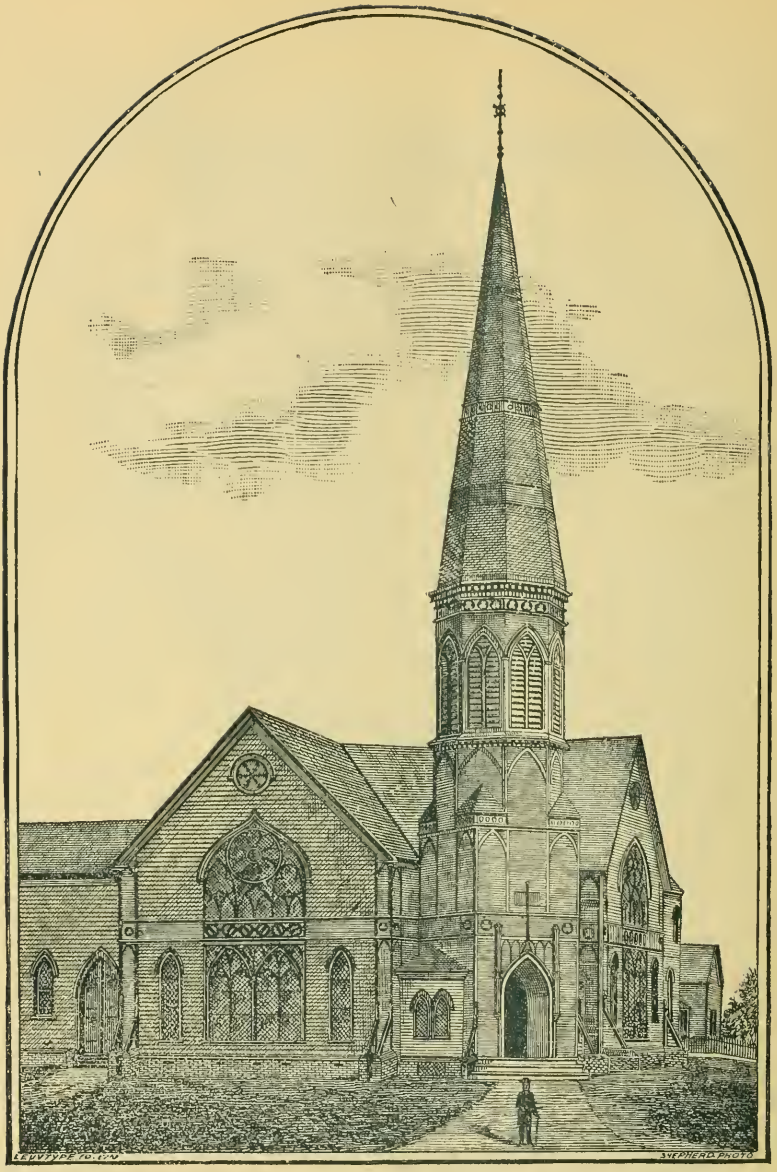
Finally, in the winter of 1878-9, Birmingham became thoroughly re-awakened. From the ailments of distressed infancy the town suddenly matured the vigor of adolesence. The Company found ready sales for its property. By the winter of 1880 the stock had reached par. Three years later the Company had called in and cancelled all of its bonds, and not only so, but at the same time paid a dividend of twenty-five per cent. to the stockholders. The history of the stock since 1883 has only a parallel in the great mining stocks of the West. It went from 100 to 200 to 300 and 400 and 500, which latter premium it had reached by the spring of 1884. Since that date it has been wholly retired from the market, merely because those holding it refuse to sell. The accidental sale reported above arose from the necessity of settling a decedent's large estate among many heirs.

BUILDING A CITY.

For thirteen consecutive years the holders of the stock of the Elyton Land Company received no returns from their investment, but did, as we have seen, carry heavy risks in the face of threatened bankruptcy. In this period of suspended animation the Company disposed of about one-half of the area of its lands in low sales, or free gifts. At no moment in its doubtful struggle for existence, did it refuse to sell lots to *bona fide* settlers at prices below their market value. It sold all this while to professional speculators, also, on terms highly favorable to that class of purchasers. When the real estate market had been restored and private transactions covered large profits, the Company entered on advanced rates.

But the Company's terms and prices have always been more favorable to purchasers than the prevailing terms and prices of private dealers.

It has been the settled policy of the Company from its earliest business operations, as openly declared by its President, so to conduct its affairs and transactions that every individual who may come to Birmingham, to help Birmingham, shall share in the profits of the Company. So well has this course been main-



First Baptist Church, Birmingham, Ala.

tained that Dr. Caldwell does not think that a single individual has thus far ever made a purchase from the Company who has failed to realize a profit on his investment, if placed on the market.

The Company has not only adhered consistently to its original policy in making easy terms and fair prices to those who buy from it, but it has made large and valuable

DONATIONS,

of lots and privileges to the city, to the churches, and to the general public. These gifts have prevailed early, and late, whenever "wisdom and understanding" suggested them as aids to building up the city. When the Company's resources were limited to land, then it gave land, since it has grown rich in both land and money, it has used both freely in the same cause. The aggregate of these gifts amount to

EIGHT HUNDRED AND TWENTY-FIVE THOUSAND DOLLARS

present valuation. They consist in land to the county for the Court House within the city, to the city public schools, to the furnaces and rolling mills, and other industrial enterprises. It has spent large sums in grading and draining the streets, in building a handsome bridge over the railroad tracks for vehicles and footmen, 1,000 feet long, which is a gift to the city. It has prepared Lake View Park, a public resort for the free accommodation of thousands of people.

Princely as this sum appears, it omits entirely the gift of the whole system of streets, it does not include the Company's expenditure on the Water Works, nor on the buildings, used in part, for its own offices, and in part as one of the principal hotels in the city.

NOT CHARITY.

The Elyton Land Company affects only the business meaning and bearing of its own acts and motives. The Company cast corporation bread on the waters, and it has abundantly returned in tangible riches. The financial policy of the Company constitutes the history of Birmingham. Ten years ago the total of its assets aggregated an amount below the aggregate of its debts. Its stock was not quoted. Nobody would buy it. Ten years later it owns probably less than one acre where it originally owned two. The land it now owns is worth less than one-third of the whole rea, which it owned when the city was founded, is now worth.

THE AGE
THE AG

It is now free from debt, and for the last two years the stockholders have received 100 per cent. per annum on their investment. The rise in real estate was so decided the latter part of 1885, and the outlook now so encouraging, that it is more than probable that the dividends of the future will surpass those accrued in the past.

The property now owned by the Company is doubtless rated, by the test of daily transactions, not far below $5,000,000.

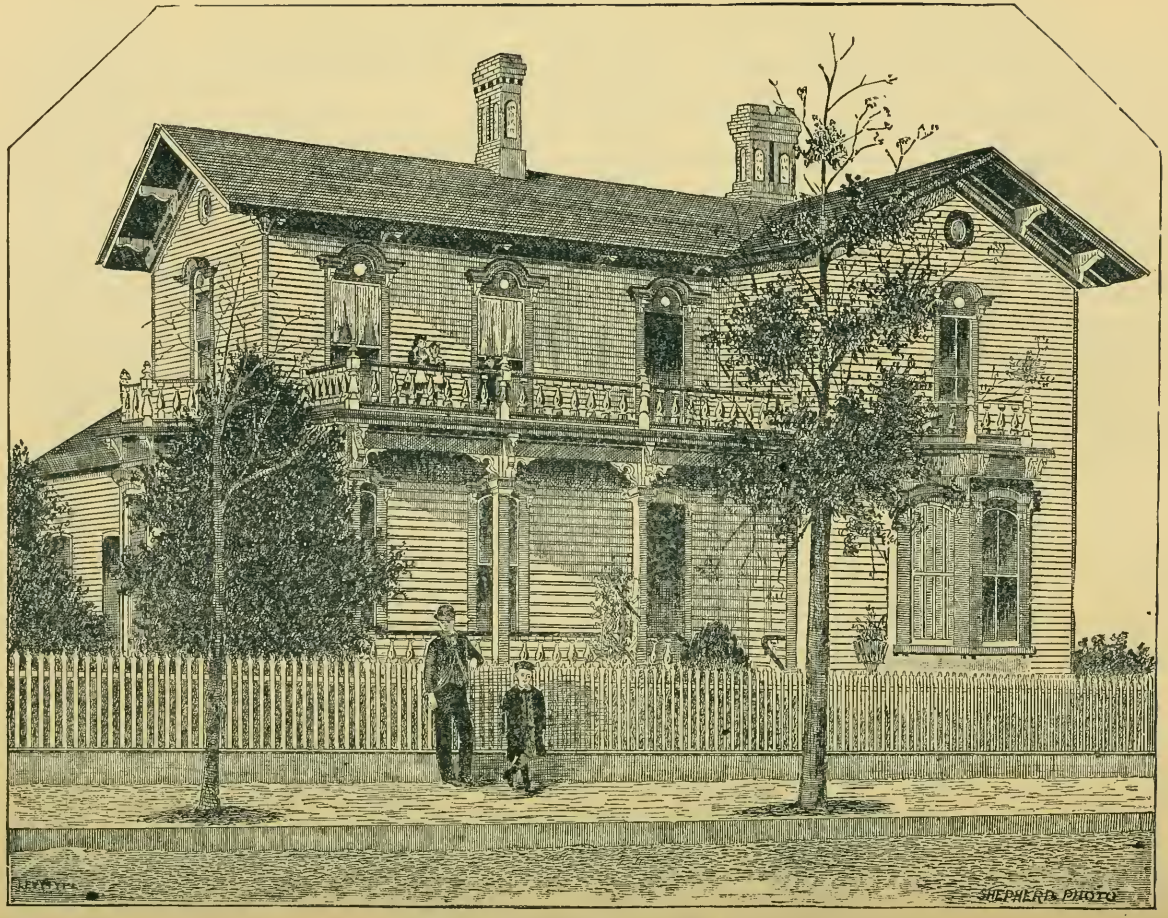
OFFERS TO INDIVIDUALS.

The Company proceeds with unflagging energy in the line of policy it originally adopted for building a city. Any man with requisite capital, character and energy, coming to Birmingham to establish any reputable business enterprise, can buy from the Elyton Land Company, on easy terms, and long time, a house already built for his family, and a lot on which to erect a business stand. He may pay by the week, or by the month, and hold the property rent free.

If enterprises desire to open here whose influences would bring additions of desirable population and trade, the Company will help all such to raise the necessary funds to begin operations.

Behind the unparalled resources lying at the gates of Birmingham, and waiting the energies of all men, stands the immense wealth of the Elyton Land Company, ready to pledge a hearty welcome and generous support to every honest enterprise, individual or incorporated.

Mistakes are not capital offenses in the corporation code. The Elyton Land Company does not claim exemption from its share of errors in the past. Self-interest in its own case is indissolubly bound to the growth of Birmingham, and to the contentment, prosperity and confidence of every individual man and woman within its bounds. Animated with this sentiment, it offers to associate its own advantages with those possessed by the general public, and to hold intelligence and labor in perpetually cooperative sympathy with its capital.



Residence of Hon. A. O. Lane.

CHAPTER VI.

ROBERT H. HENLEY.

We recur to our proposition that the industries developed in this region of Alabama have been controlled and directed by Southern brains and energy, and Southern money, and that Birmingham, from its very foundation, has been distinctively a Southern town. A pleasing and conspicuous illustration of this historical incident may be discovered in the sketches this work will contain of the lives of the group of men who have been most active and influential in making the history of the town and establishing it in prosperity.

First in order of mention comes the brilliant young Alabamian, the town's

FIRST MAYOR.

Robert H. Henley was born in Demopolis, Marengo county, Alabama, the center of the wealthiest, most populous and most refined community of cotton planters in the whole Southwestern territory. He came of a handsome and chivalrous race; his father was a noted lawyer of his day. A beardless youth, he entered the Confederate Army. The war ended, he soon thereafter married the only child of Major Thomas Peters. A most beautiful Southern woman, and most accomplished in society, thus became one of the early settlers of the town.

Young Henley had settled in Elyton as early as 1869, two years before the date of the charter of Birmingham, adopting no doubt the faith of Major Peters in the coming event foreshadowowed by the railroad enterprises projected in this section. Reaching Elyton, he pursued a well cultivated taste for politics, and a remarkable facility for discussion, by establishing in that village

a weekly newspaper, called the Elyton Sun. The field of political journalism in Alabama was then a most inviting one. The very life of the State was held in the clutch of an ignorant, degraded, corrupt and poverty ridden faction of the population, sustained in power by the Federal Army. The power of the press alone could act the double part of keeping alive the fires of patriotism in the hearts of the people, and at the same moment per-

R. H. Henley
Mayor

suade them that in this policy of waiting and enduring was their only hope. Of representation, either in Congress or in the State Legislature, the tax paying part of the community had almost none. At this time the cultured and bold Forsyth edited the old Mobile Register, the favorite paper of the planters of the black belt. McKee, vigorous, original and aggressive, had founded the Southern Argus in Selma, and was pushing it into every part of

the State with surprising success. The Montgomery Advertiser, always true and always cautious and influential, went forth under the editorial control of Robert Tyler. The Elyton Sun promptly entered the arena, and in full sympathy with its illustrious co-workers, struck blows heavy, and fast, for Alabama's disenthrallment and restoration.

It will thus be discovered that the first Mayor of the city was a progressive man. The leaders of the movement, to make a city here, found him with his printing press ahead of them. In accordance with the fitness of things he had come with the railroad. His press and his office occupied one corner of the Alabama and Chattanooga railroad office, having been moved up here from Elyton, on the first signs of the coming city.

Mr. Henley was appointed to the mayoralty by the Governor of the State, the appointment being made in response to the solicitations of the solid men of the town. A commanding presence, ready resources, energy and courage, were esteemed by them desirable personal qualifications in the chief administrative officer of a city then of very mixed population, adventurers of all grades largely comprising it.

Some turbulent folk had heard of the failure of their scheme to elect a Mayor, and forthwith called a public meeting to take steps to correct the policy of the Governor in filling the office. About dark an unfinished building on Second Avenue, between Twentieth and Twenty-first streets had been dimly lighted and the gathering began. Conference among the leaders resulted in the dispatch of a committee of one, or more, to Mr. R. H. Pearson, then a young lawyer recently arrived, to invite him to preside. Upon assuming the Chair, the presiding officer asked to be informed respecting the object of the meeting. Upon hearing this stated he ruled that the meeting stand adjourned *sine die*. But in this rebellious crowd were many idlers awaiting the expected oratorical efforts and excitements of the occasion, and were loth to be disappointed. A meeting was called for the next night. A prolonged discussion then followed and served as a safety valve to the temper of the audience. The meeting broke up, having accomplished nothing, and thus ingloriously dissolved the first organized demonstration against law and order in Birmingham.

The protest of his fellow-citizens of the night meeting failed to disturb the young Mayor's theories of government. These were chiefly confined to the "general welfare" provision of the law. Circumstances seemed to require him to respect preponderating conditions new to Alabama civil administration, and thus, in the light of these, he ordered his conduct. He performed personally, as exigencies arose, the duties of Chief of Police, Judge and City Council. If the law of the books failed to suit the conditions of Birmingham, local executive authority made the law, and confirmed it as Birmingham's necessities suggested.

Mr. Henley maintained his office for a year. Continued ill-health induced him to resign before his term had expired. His faith in the future of the town rose to enthusiasm. "Let my only epitaph be, 'Here lies the first Mayor of Birmingham,'" was his exclamation to his Demopolis friends. By faith in the future and by efficiency of personal and official services he so impressed himself on the earliest history of the town as to have connected his name inseparably with it in the light of a commanding influence.

Dying of consumption after lingering suffering, in Savannah Georgia, the body of the first Mayor was brought back to the scenes of his faithful labors, and buried in the town cemetery, amidst most marked demonstrations of universal public respect.

CHAPTER VII.

JAMES R. POWELL.

"DUKE OF BIRMINGHAM."

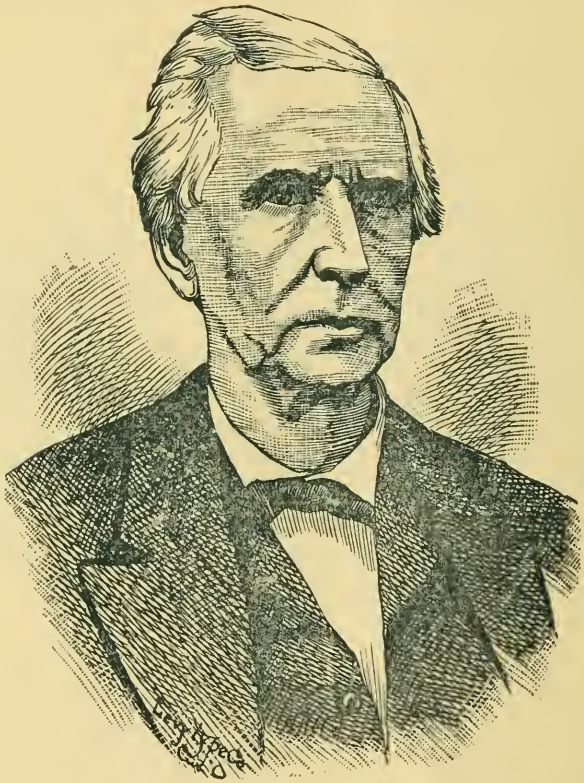
This remarkable man became the second mayor of Birmingham. Of imperious will, a commander in bearing, possessing wide experience in business and great knowledge of men and great powers of application, his assumption of office at this period was most opportune. In addition to the authority of mayor, he was at the same time president of the Elyton Land Company, the main support of the city. So wide was his influence, and so nearly was he in truth the founder of the city, that he readily received the soubriquet of "Duke of Birmingham," and was known by this fictitious title, descriptive of a most important reality.

Col. Powell, unlike Mr. Henley, received the mayoralty by result of a popular election. The vote stood:

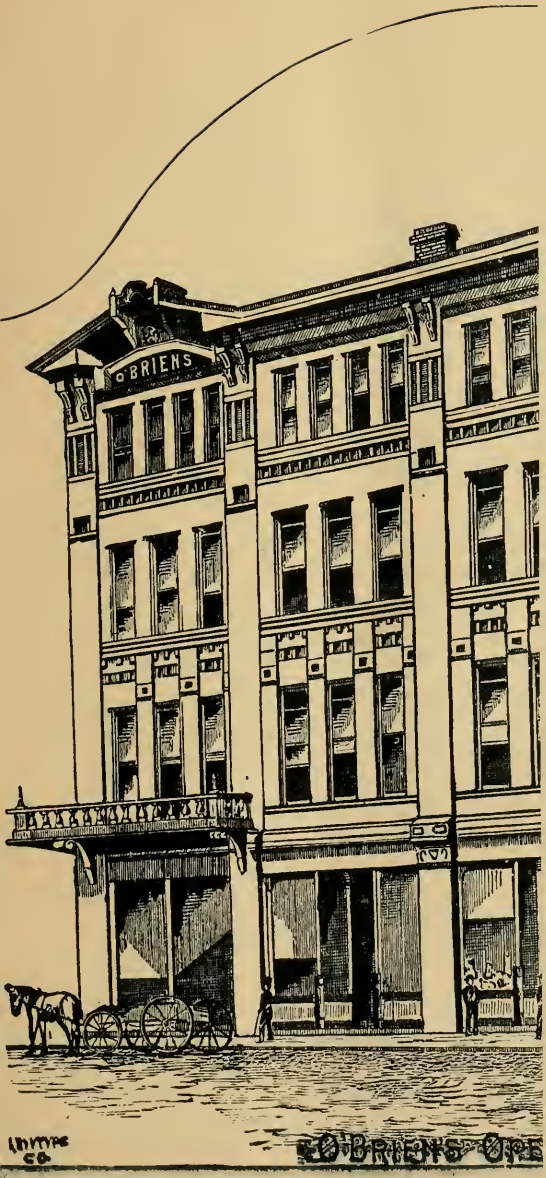
Powell	346
Ellison	195
Webb	74
Tate	43
Aggregate vote	658

A Virginian by birth, the future mayor had emigrated to Lowndes county, Alabama, coming alone across the country mounted on a horse, which constituted all his worldly property. The youth, then in his teens, and the State of Alabama then taking the first steps to come into the Union, became of incalculable service to each other. Together they increased and prospered. It was far from an unknown man who had come into the mountains in 1870 to found a great city, which should be the pivot of the future fame of Alabama. He had been law-

maker and always the friend of the State. He had organized and directed great industrial schemes contributing to its growth. He had long waged "a war of giants" with Robert Jemison, Esquire, a wealthy and cultivated gentleman of Tuscaloosa, in the stage line business. After both contestants had become fearfully depleted they consolidated their enterprises, and the famous stage monopoly of Jemison, Ficklen, Powell & Co., traversed



E. R. Powell
Pres't Elyton Land Co


O'BRIENS
O'BRIENS OPE
LINOTYPE CO.

O'BRIENS
O'BRIENS OPERA HOUSE
SHEPHERD PHOTO

every part of Alabama, until driven out by the iron horse, on the iron pathway.

An incident illustrative of Col. Powell's general character occurred, during the war between the States, in Montgomery. The Confederate sea-ports had long been closed against commerce; the hospitals were without ice, and none could be brought into the country from any direction. At that period its manufacture by chemical process was unknown. Suddenly in the winter of 1863-4 an event occurred almost without precedent. The Alabama river was frozen at Montgomery from bank to bank. Instantly, Col. Powell, who then lived in the city, resolved to make an ice harvest for the benefit of the army hospitals. He went out upon the street and soon enlisted every dray and available laborer to be had. The several days during which the freeze continued found him working heroically, gathering and storing the ice from the river. At the end he was offered $40,000 for his crop. He gave every pound to the Confederacy for the benefit of the army hospitals the ensuing summer in Alabama and Georgia.

Coming to Birmingham to assume high trusts, Col. Powell at once entered upon their performance with indomitable zeal, and the most comprehensive intelligence. He wrote hundreds of letters and dispatched circulars in every part of the United States, and often to Europe, to entice to Birmingham, the attention of the world. He strove in season and out of season with tireless energy to attract here capital, labor, newspaper writers and all of the varied influences which would augment and advertise the town. He talked in the eloquence of an earnest man to all who came to see and listen; and he himself went out hence into the North and South, and to Europe, to talk to those who had not seen, or heard of, Birmingham.

He told the world that here unequalled stores of coal and iron ores and lime, lay touching one another. He pointed to the lines of commerce already completed, and of others which when completed would give this vast wealth easy access to the sea. Gradually he caught the ear of the world. To-day the world realizes that half the truth had remained untold even in his eloquent enthusiasm.

As first president of the Elyton Land Company, Col. Powell did more, perhaps, than any other individual to establish the

Company in a broad and comprehensive line of policy. He at once determined that the city should become the offspring of the Company, and that the highest motive of the latter should be to foster the growth of the former. Long after evidences of danger had taught the Directory to waver, he steadily adhered to the original plan, to buy land and enlarge the sphere of the Company's action. One of the stockholders openly menanced him with an injunction from the courts to stay the mad extravagance of land purchases made on the basis of $25, the acre, near the city bounds. Ten years later the same land commanded $1,000 per building lot.

The visitation of the cholera and the financial crisis of 1873 overtook the city in Col. Powell's administration. At his post of duty he remained amidst events destructive of well nigh all that had been accomplished, and extinguishing to the prospects which had so recently been bright beyond precedent.

But this pioneer, at least, kept faith firm and courage undaunted. He declared his purpose to enlist the Company of which he was President in the aid of Water Works for the use of the town over which he presided. The Company fell into his plans. Pipes were run to Village creek, and an abundance of water was secured just as the population for whose relief the coveted fluid had been obtained were abandoning the town which had ceased to grow.

THE ALABAMA PRESS ASSOCIATION

met in Birmingham in the spring of 1873. Col. Powell was elected honarary member. He used his position adroitly to influence the Association, contrary to precedent, to appoint Birmingham as also the place of meeting for the next year. The motion was strenuously resisted, but the strategy of the mover prevailed, and his resolution was passed. This point gained, he moved that the

PRESS ASSOCIATION OF NEW YORK

should be invited here at the same time. The invitation was given and accepted. At that time this action of Col. Powell displayed a masterly intuition. It was then no unusual thing to witness the interference of the Federal army with civil administration, and elections at the South. The legislatures of Southern States had been dispersed at the point of the bayonet, Alabama

among them. What signified this erratic movement of the Alabama press inviting to the center of the State the New York press, a large proportion of which were avowed abettors of the existing policy of the Federal administration?

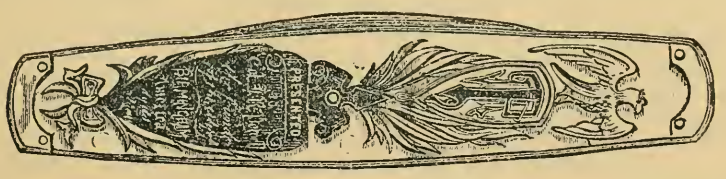
THE FIRST "BOOM."

The invited guests came. The happy results of the policy which dictated the invitation was revealed to the perception of every newspaper reader in Alabama, instantly. Scores of letters to the metropolitan press of the State of New York, dated at "Birmingham, Alabama," permeated every part of the Union, and went to European centers of capital and intelligence. The wealth of Alabama in coal and iron had never before been so advertised. These letters gave Birmingham its first great "boom." The town had not the money to give itself a tithe of the advertising which the mayor's strategy had obtained for it gratuitously, and even gloriously.

Intelligent observers of events now look back to this occasion not only as one fraught with the happiest consequences to Birmingham, but as one which exercised an important influence in the final restoration of civil government to the South.

Col. Powell donated the entire amount of his salary in the mayoralty to the public schools of the city.

The citizens presented him a testimonial of their respect in the form of a pocket knife. It contained many blades and instruments of convenience, and the handle was elaborately ornamented with gold. The cost was $130.00.



The heroic career of Col. Powell in Birmingham closed with 1874, except in the particulars which will follow. He retired to his large cotton plantation in the Yazoo valley, Mississippi. In 1878 he was invited to return to Birmingham to stand again for the mayoralty. The vote, which meanwhile had accumulated here, was stranger to him than he to the vote. He was known to it only by tradition. Younger men contested the election with him. He was defeated. Unwilling to accept the

issue as declared by the authorities, he rushed into the courts to assert his rights. Defeated even there, he finally disappeared from the scene of his greatest services to Alabama, and of his most noble ambition; leaving in the history of the city an ever-widening evidence of his good works.

Col. Powell met his death, a few years after the abandonment of his Alabama home, in a petty altercation with a youth in Mississippi.

Chapter VIII.

LABOR.

The infancy of rapid industrial growth may ordinarily be expected to contain various transitory influences flattering to labor, but unimportant as features of permanent character. It is gratifying to report that the relations of labor to capital in the manufacturing district of Alabama have thus far produced no organized conflict. There are economic conditions peculiar to Alabama which encourage the belief that this conservative tone will be long perpetuated. A manufacturing community, possessed of marvellous natural resources, suddenly developed in the center of a robust agricultural monopoly, is the social situation at Birmingham. Thousands brought here by farmers and countrymen have swelled into millions in orderly process. Laborers coming into this field from the neighboring cotton plantations to join the army of wage workers, have become, in illustrative instances, property holders. A mechanic, for example, bought in 1871, four lots, unimproved, for $200. He built thereon some houses of a cheap kind, rented them, and on the rents supported his family. He sold the same four lots, reserving the right to remove the buildings, in April 1886, fifteen years later, for $10,000 cash, and sold for less than the market value of his property.

What are the opportunities open to labor in the iron and coal industries of Alabama, and what are the circumstances of local nature which invest them with extraordinary promise? Answer to these inquiries can only be here suggested in general terms.

Ours is an Industrial Civilization. Physical forces have opened in Alabama a broad entrance for the humanities of modern labor. The fertility of the fields, the richness of the mountains, the abundance of the water ways, the equability of the cli-

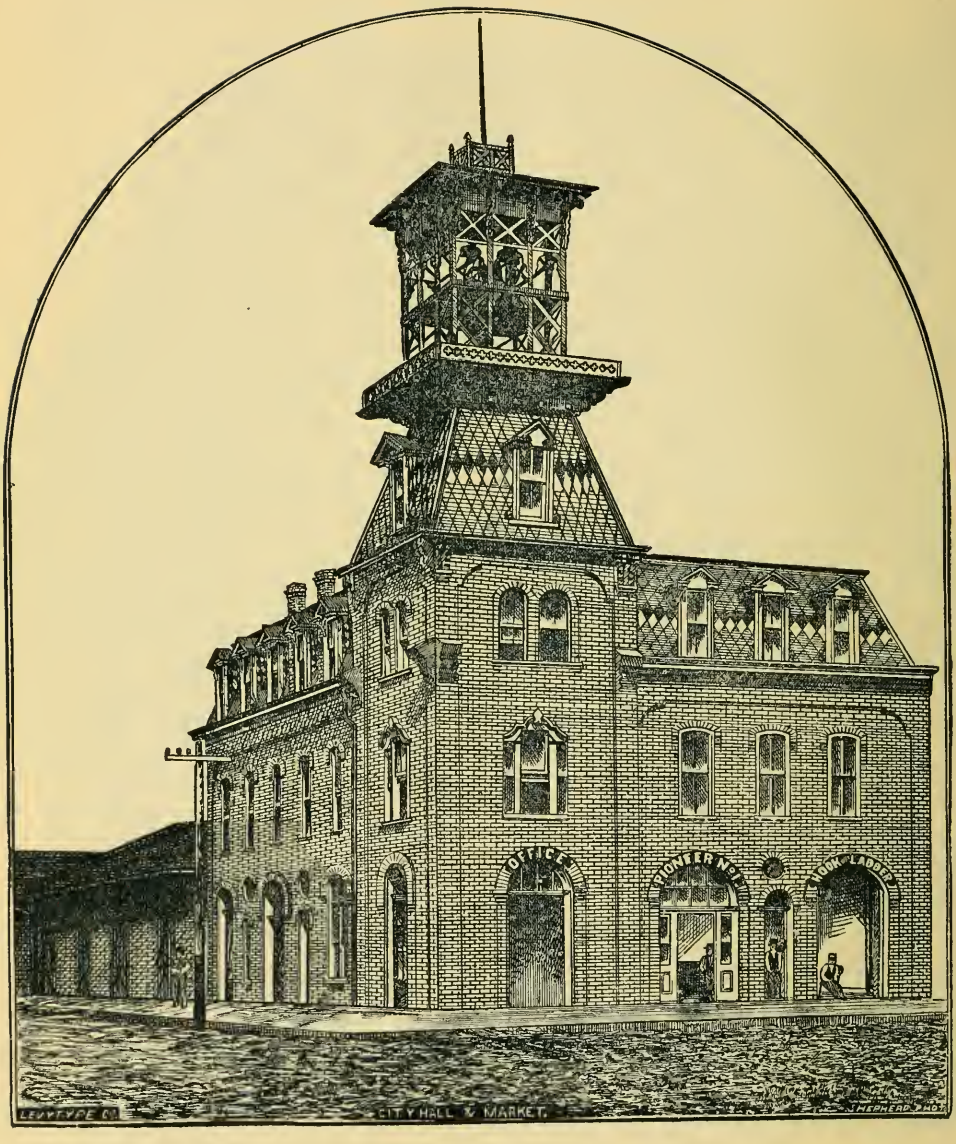
JEFFERSON CO
SAVINGS BANK
SHEPHERD PHOTO
LEVY TYPE CO

mate constitute the meeting ground between labor and capital.

Geography has been aptly described to be the hand-writing of the Creator across the plane of the world. It stands as law to divide the earth into nations, with differing tongues, differing customs, differing industries and forms of government. It is curious to follow the record of this law, throughout the world, and to compare its meaning here with its effects elsewhere.

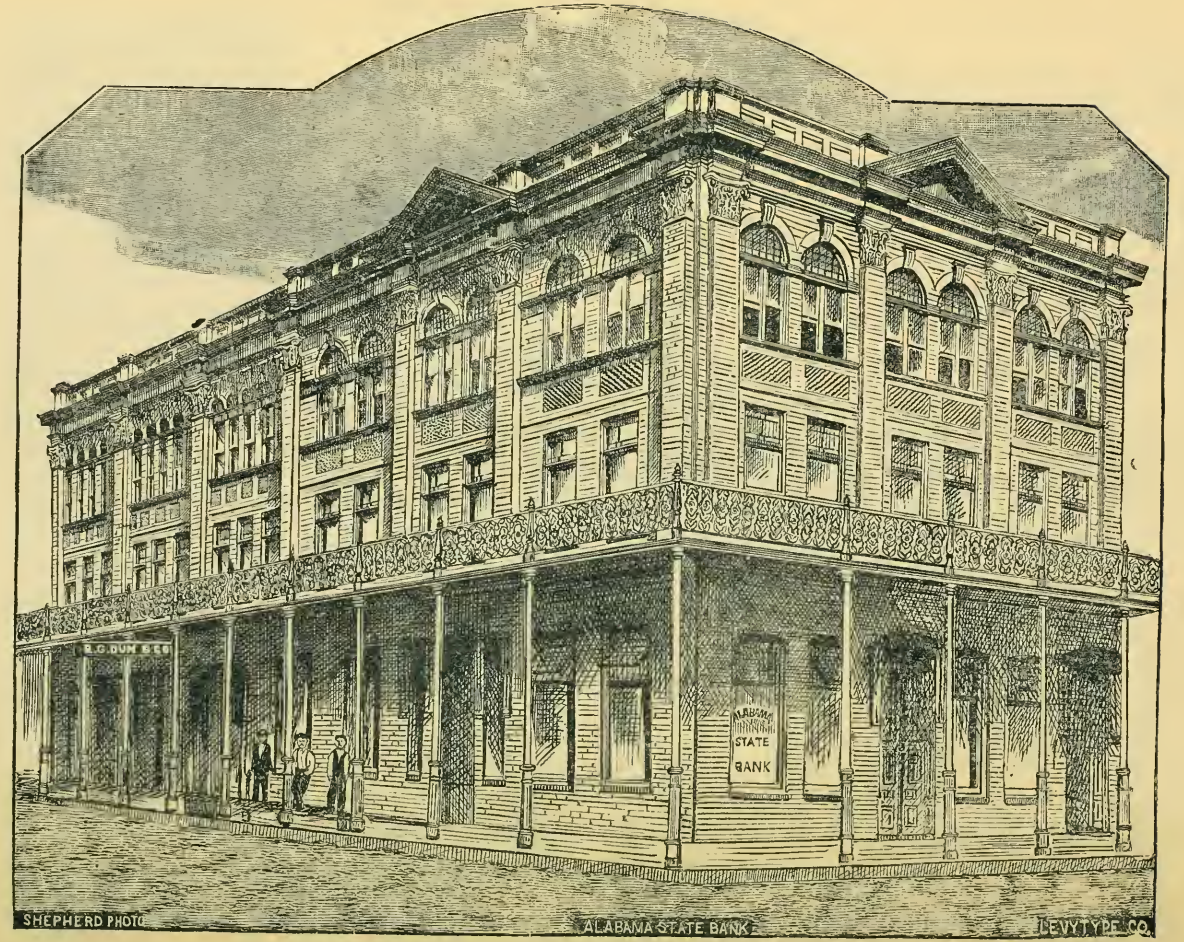
There are great dividing parallels reaching across the area of the Union, but these do not confine within their bounds distinct and peculiar climates. They traverse the country from North to South and never from East to West, thus including in their separate territorial bounds each, all varieties of the national climate, and the normal influences of climate over national character. The Allegheny Mountains enter New York from Canada and terminate in the central counties of Alabama; the Mississippi and its tributaries connect Pennsylvania, Minnesota and Dakota with New Orleans; the Rocky Mountains come out from British Columbia and pass, into Mexico, through the whole length of the Pacific States. Isothermal lines passing over soils capable of returning wealth for the labor bestowed on them, must inevitably locate in each of the areas between these great natural barriers, a sympathetic civilization. There are no like barriers crossing from East to West, as we seen, hence the ordinary enterprises of an energetic race secure unobstructed communication, first from North to South, and finally from East to West across mountains and rivers. Thus the geography of the Union establishes the homogeneity of the population and the sympathy of their customs and institutions and political organization.

There are, in Alabama, mountains of practically inexhaustible deposits of minerals most profitable to manufactures and commerce. Below these are surrounding plains so fertile, and presided over by a climate so equable that the population devoted to manufactures and commerce may be fed and clothed after the usages of the highest civilization alone from the products of Alabama farms. Nor is the narrative of this wonderful concentration of natural bounties complete until the channels of communication between them, placed by nature, have been explained, and their influence proven to stand conspicuous in the promise of the future. The map shows several navigable water ways which, passing through the mountains, trend through the valleys to meet in


OFFICE
PIONEER NO 1
HOOK & LADDER
LEFEVRE CO
CITY HALL & MARKET
SHEPHERD BROS

the Bay of Mobile. The industrial influence of water ways through a naturally rich territory is immense. The Erie Canal connects Buffalo on Lake Erie with the city of New York. The State of New York is traversed by a magnificent mileage of railroad, covering as with a net-work its whole area. Yet while the territory reached by the commerce of the Erie Canal is only about 38 per cent. of the State's territory, 74 per cent. of the population lives within it, and 73 per cent. of the manufactories of the State are confined along its banks. The canal is now maintained by the State without the benefit of tolls, nevertheless the Canal Commissioner, a most reliable and competent officer, estimates great indirect benefits in increased values, given to the territory adjacent to it, in towns, villages and farms, subjects of State taxation. The boats are said to take $7,000,000 in supplies from the merchants of the cities along their course, yearly. The heavy freights in iron, coal, marble, copper, fire-clay etc., passing out from the mountains, and the breadstuffs, live stock, cotton and wool coming in from the agricultural districts, and the lumber from the timber lands, to the manufacturing towns of the mountains, must, in Alabama, eventually seek the cheap freight charges of the free water ways. Competition in all commodities of commerce is rapidly reducing profits, and, as a consequence, costs of transportation are more and more decisive of the course of trade. Labor is interested to the full extent of the value to capital in every natural advantage.

There are striking evidences of the kindliness of "fellow-feeling" in Birmingham between meritorious classes and people. The honorable and highly important position of Postmaster of the city was conferred by the government on a young man, self-made and barely twenty-five years of age, with the warm approbation of the entire business community, who left the labors of a master machinist in one of the iron industries of the town, and also the office of Colonel on the select staff of the Governor of the State, to accept it. The trusted and worthy President of one of the Banks began his career in the city at hard labor, and, by economy and wise investments, has risen to his present rank. An influential member of the City Council had been for years and is now, a train engineer on one of the trunk lines of railroad crossing here. One of the later Mayors of the city served an apprenticeship at his trade in early life. There are lawyers in practice,


SHEPHERD PHOTO
ALABAMA STATE BANK
LEVYTYPE CO.

doctors of medicine, editors of newspapers, teachers of schools and clergymen in charge of congregations dependent on fees and salaries for support, who receive less, probably, by half, than the wages paid by some of the coal mines and iron furnaces to their highest grades of employees.

Should the Government, under the auspices of the forthcoming national educational system, establish in Birmingham a State Manual Labor Training School, both the literary culture and the skill in handicraft, taught there, would prepare young mechanics, practical engineers, and others to compete for positions of the first influence in general society. The intellectual character of the labor of the times is destined to be amply demonstrated by the industries of this city.

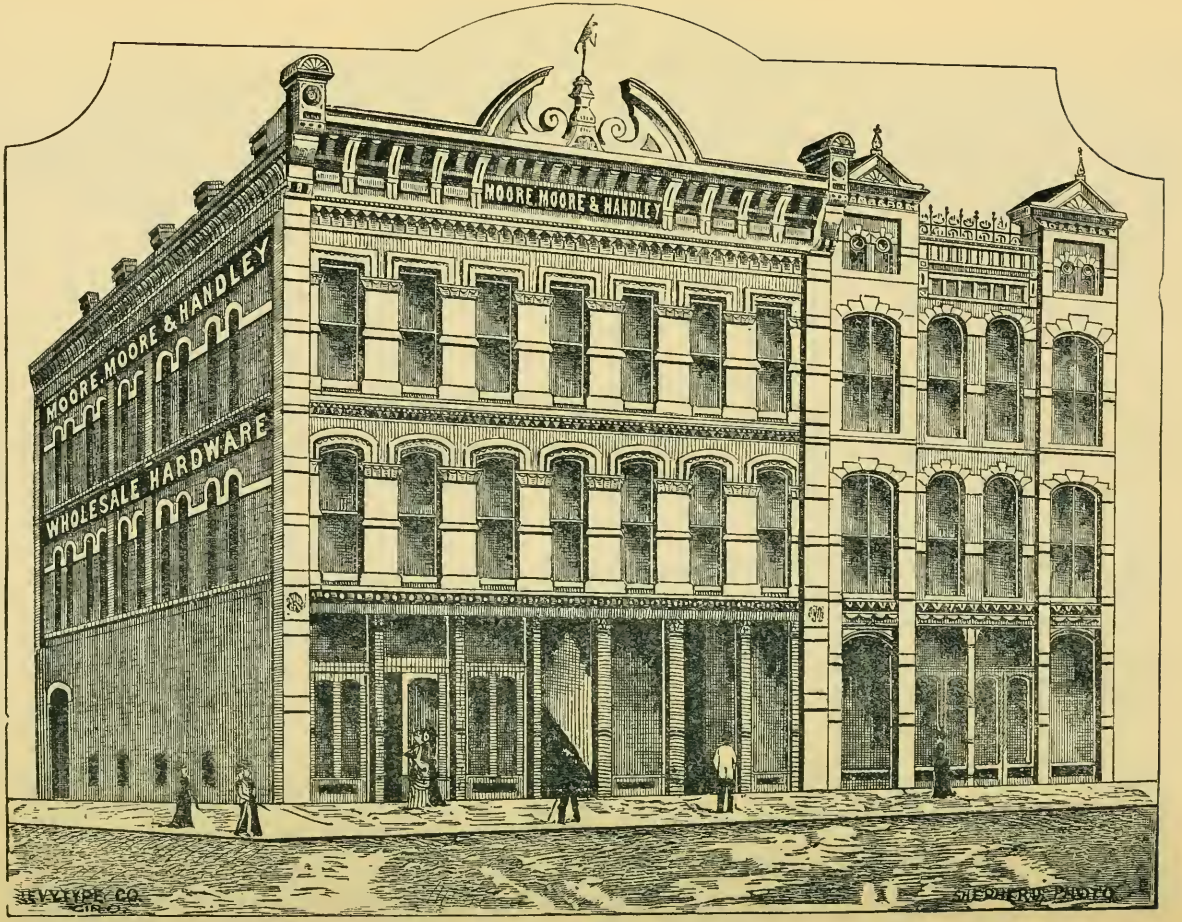
Respecting opportunities for employment open in the city, the fact that many new houses are monthly opened as residences and as stores and are promptly filled, must indicate a healthy demand for rent payers who draw incomes. Respecting the cost of living, the city is a trade center, constantly increasing its jobbing patronage, under lengthening lines of commerce, while there is a steady increase of local supplies in garden and dairy products, on descending prices.

Special inquiry discloses the favorable omen that the good wages offered by the manufactures and mines are drawing into their employment no inconsiderable number of the native white farming population of the adjacent territory. One of the oldest of the coal mines, employing several hundred hands, reports its labor force divided about equally between whites and blacks, and of the former two-thirds are native whites.

It would appear plain that more than ordinary realizations await the labor engaged in all the great divisions of industry to be developed in Alabama. It will not become necessary that as wealth must accumulate men must decay. There will be no latent motives to discover, in our progress, either the approach of the divine right of the king, or of the natural right of the mob.

THE NEGRO IN HIS TRUE RELATIONS TO THE NEW SOUTH AS A LABORER.

The problem of freed negro labor, in the future manufacturing interests of the South, may receive much light from the daily experiences of the race in Birmingham.



Moore, Moore & Handley Block.

The negroes coming here from the cotton plantations, with no experience of the habits of town life, enter, as laborers, that field opened by the white man, advanced to incredulous achievement by white labor, and whose chief factor is complicated and costly and elaborate machinery, every principle of whose invention and application, originated in the white man's brain for the white man's relief.

Nevertheless, we recur to the facts, and state them impartially on their merits, which portray, in this town, the most singular ethnological problem of the day.

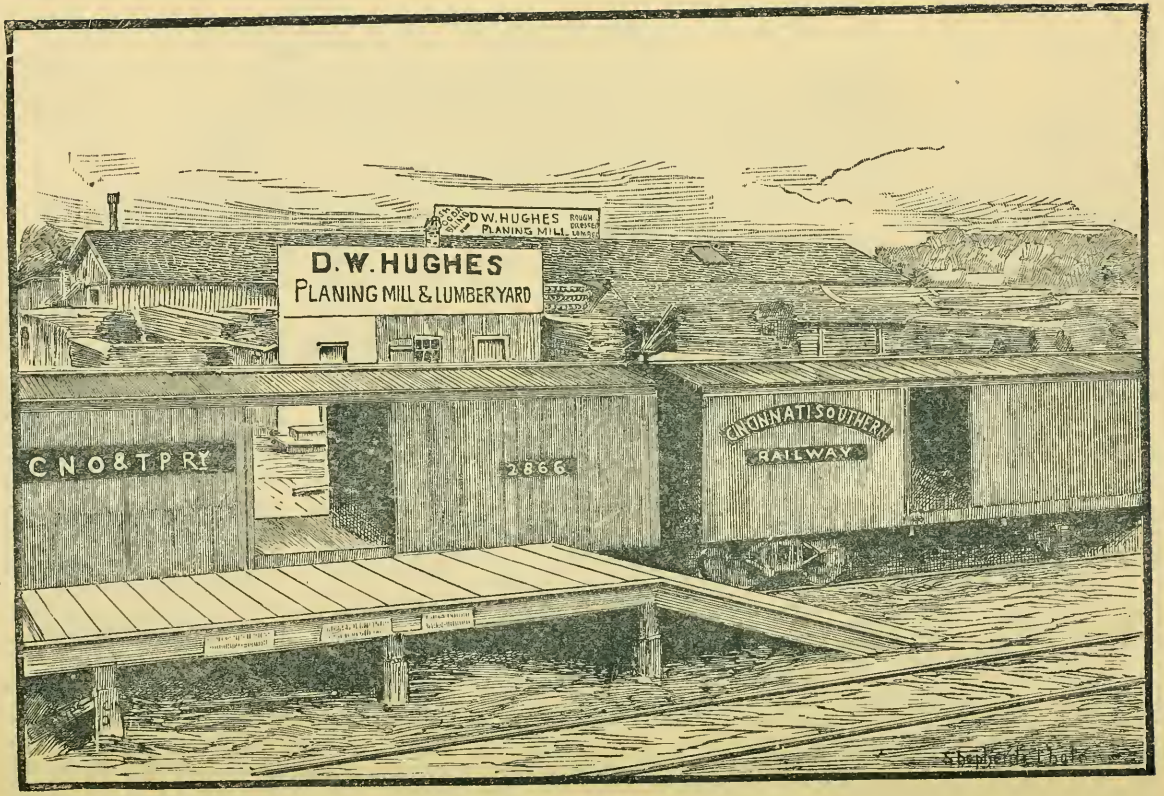
About 40 per cent. of the total city population of Birmingham is negro. About 90 per cent. of the labor employed by all the furnaces, near Birmingham, is negro. The furnace labor and the city labor is all free of this kind, except as to individuals, few in number, committed to street work from time to time by judgments through the Mayor's court.

Besides the negro furnace labor, much of the labor employed by the city manufacturing industries in iron, such as the rolling mill, foundries, etc., is negro. Increasing relative employment of it is the rule with all the hard labor enterprises.

The manifest result of the presence of the negro labor here is that we have a more intelligent and orderly white laboring population, than otherwise might be anticipated. The negro of Birmingham fills the industrial position, which elsewhere in great manufacturing towns is filled by a low class of whites. The negro here is satisfied and contented; the low whites elsewhere are dissatisfied and turbulent. The white laboring classes here are separated from the negroes, working all day side by side with them, by an innate consciousness of race superiority. This sentiment dignifies the character of white labor. It excites a sentiment of sympathy and equality on their part with the classes above them, and in this way becomes a wholesome social leaven. There are no jealousies between whites and blacks.

Besides the manufacturing element of negro population, almost all the drays here are driven by negroes; the merchants employ them largely as porters in confidential positions; the hacks are all driven by negroes; the livery stables employ them; the domestic service of the town is practically monopolized by them.

Is the negro a good in Birmingham? Not an unmixed good as a negro. But if it be true, from an economic stand point, that


D. W. HUGHES
PLANING MILL & LUMBER YARD
D. W. HUGHES
PLANING MILL
C N O & T P R'Y
2866
CINCINNATI SOUTHERN
RAILWAY

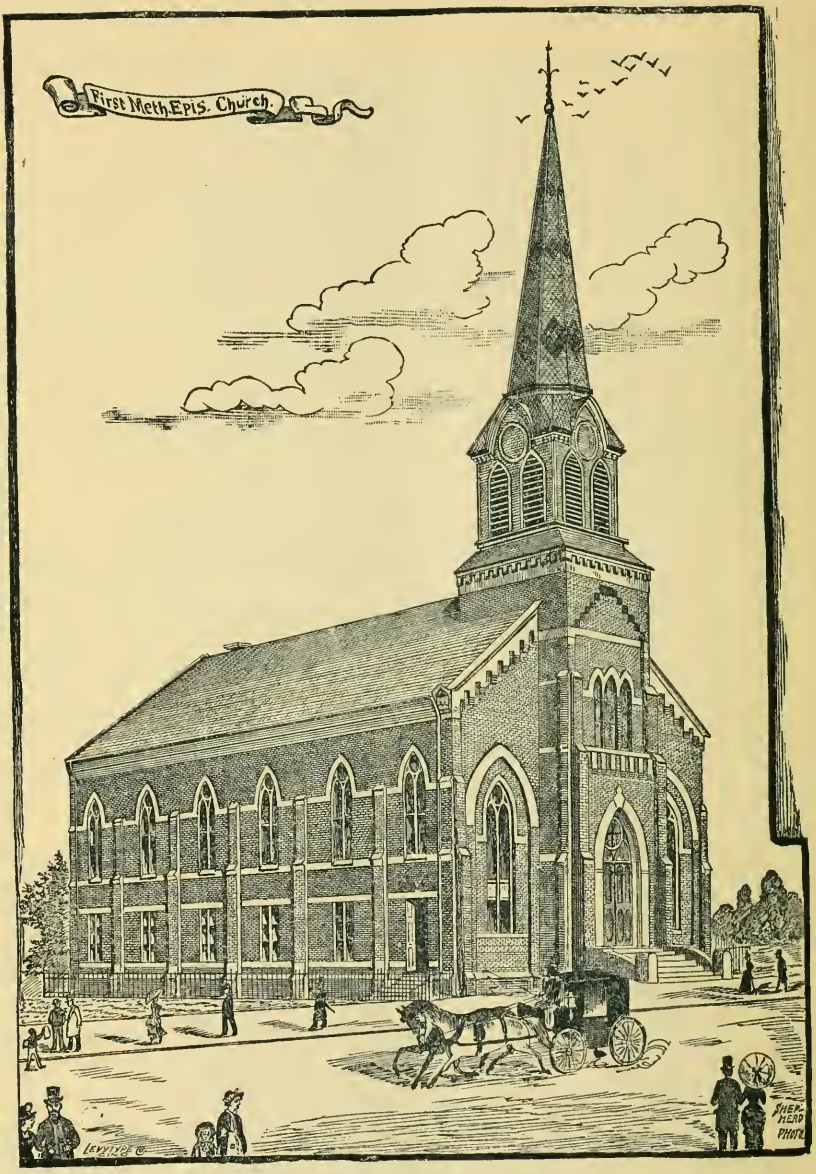
the value of a grade of laborers to the general community is to be measured by the amount of capital their labor brings into activity, by their capacity as consumers, and by their moral character, we will see the negro here doing fairly well under the rule which tests the value of a laboring class everywhere.

The houses, of the city, the negroes rent, are of the best class erected for laboring people, and they are prompt and reliable rent payers. The higher grades of this population furnish their houses with carpets, tasteful and ornamental furniture, and their diet is abundant and of the best quality. There is an unmistakable disposition on the part of these to buy real estate and build on it. Some of them own valuable lots and good houses. One of the most tasteful examples of ecclesiastical architecture in the city is a negro Baptist brick church ; another is a Methodist brick church being built by the negroes from their own resources. They own numerous wooden chapels, well kept and well attended.

It is not to be denied, that the necessary discipline of a manufacturing community is the explanation of the success of negro labor here ; it is not to be denied, that as a laborer, the negro here is below the old slave standard of efficiency in his race, and is here below the standard of white labor engaged elsewhere in the United States in like industries. But every day's work here is paid for in cash, and less than a day's work suffers proportionate reduction of wages. Every pound of meat and bread he must pay for, in cash, who consumes it. Work begins by the clock and ends by it.

The great majority of the prisoners in the county and city jails are negroes. The majority of prisoners in all jails in all countries of civil law and order, are of the lower classes, whether white or colored. The negro is the lower class of our population. Therefore, when we appeal to either sanitary or moral statistics to show the relation of the negro race to our general society, we must be prepared to acknowledge, not only the race, but the class attitude he occupies toward it ; and to compare his record with the class record of any race in any city charged with the performance of the line of service filled by the negro of Birmingham.

The county of Madison is one of the largest cotton producing counties in Alabama. There the negro is the chief agricultural laborer, and there he occupies as a tenant of the best agri-


First Meth. Epis. Church.
SHEPHERD PHOTO

cultural lands in the State, a controlling influence in politics and in trade.

The report of the Madison County Health Officer for 1875 is here annexed. It may interest the statistician, but it is vulnerable to the criticism of all like reports, and that is, it describes, under the specification of color, a class sanitary condition.

There were 449 births reported, 84 of which were from the city, and 345 from the county; 271 were white and 178 were colored. There were 360 deaths, 135 from the city, and 225 from the county; 141 were white, and 219 were colored.

The total death rate in the county and city included per 1,000, was	8.78
The total death rate, white	6.93
" " " colored	10.33
Total death rate in county exclusive of city, per 1,000	6.42
" " " " " " white	5.54
" " " " " " colored	7.34
Total death rate in the city	22.5
" " " " " white	15.0
" " " " " colored	30.0
Total birth rate in the county including city	10.97
Total birth rate in city	14.00
" " " " white	17.33
" " " " colored	10.66

The number of still births in the county, 11; 4 white and 7 colored. Instrumental deliveries, only 7 reported; 6 white and 1 colored.

Only white men of skill, character and intelligence can compete with the negro, and competition of this kind being in the higher grades of labor, the negroes are naturally kept out, and the whites kept in, by it. Thus it is that the town of Birmingham owes its character for good order to the natural relations of the races, and their presence here in natural proportions of demand. The fact that Southern white men are the prevailing influence must be allowed great weight in establishing peaceable relations between the races. Southern men are, and ever have been, the best friends of the negro.

The negro can only come into a manufacturing community as capital and skilled white labor may call for his services. He will grow apace with the customs, industries and morals of the community in which he lives, but will never lead in its growth. An hundred years after Shakespeare and Bacon, the country no-

LEVYTYPE CO
COLORED BAPTIST CHURCH
SHEPHERD PHOTO

bility of England were rude, illiterate and immoral. In that period the shops and houses of the streets of London were unnumbered because the great mass of those who traded, and visited, could not read the letters or figures on the doors.

This page assumes only the duty of stating facts concerning an interesting social question, reaching into every relation of Southern life, and greatly misunderstood.

G.A. PACIFIC. MAIN OFFICES.

CHAPTER IX.

SANITARY.

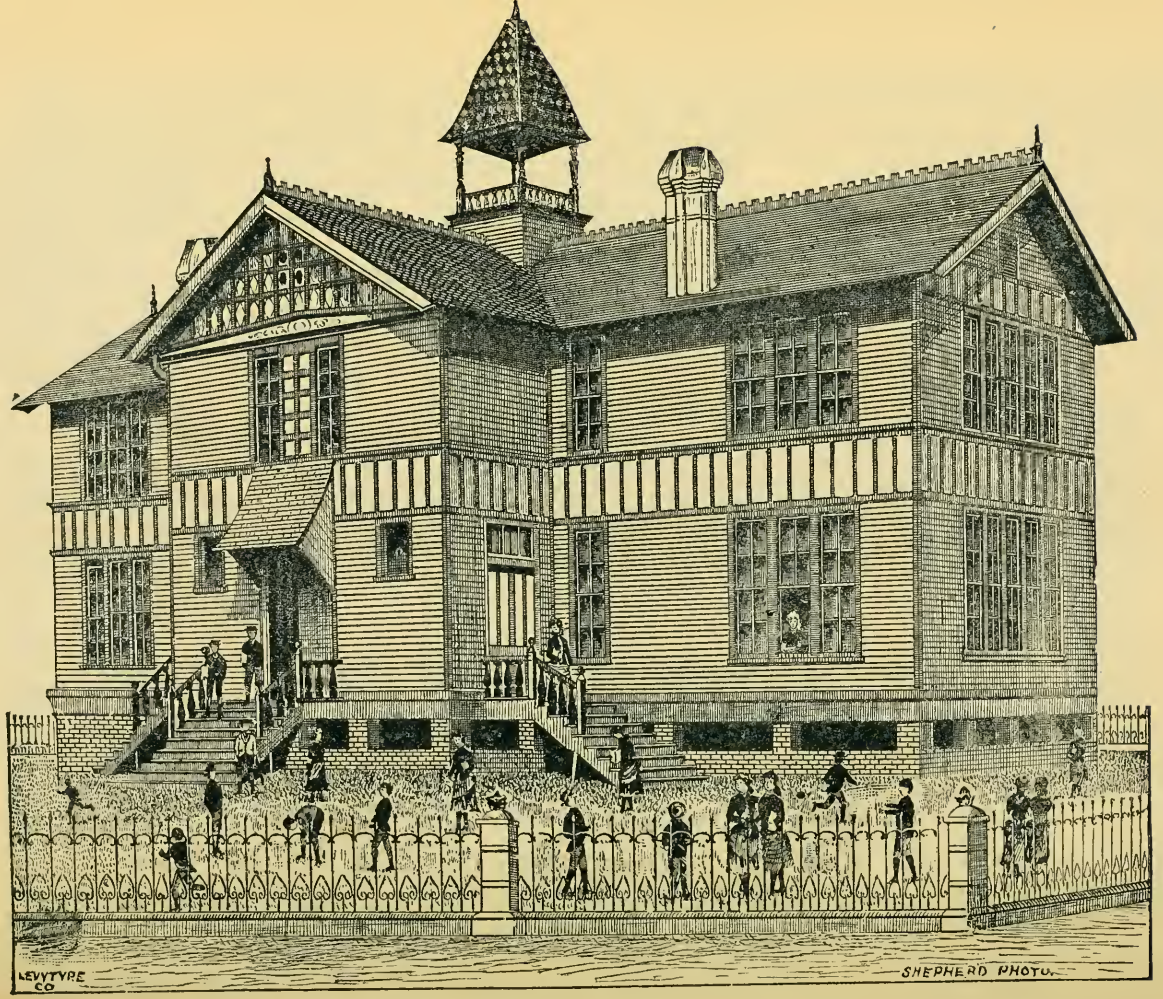
BIRMINGHAM is situated in a valley gently undulatory and naturally drained. It is bound on the North and the South by spurs of the mountain ranges, but the Eastern and Western ends of the valley are open. The elevation in this vicinity is greater than any point in the surrounding territory. For example, Blount Springs, some fifty miles to the Northeast, is situated among the mountains, yet the elevation of this city is greater than that of the Springs. It is thus made apparent that drainage is entirely practicable for the city.

The Constitution of Alabama was framed to counteract, in matters of taxation, great abuses which had been imposed on city property under alien laws. It forbids the amount of taxes sufficient to improve, rapidly, a growing city. Nevertheless a vast amount of drainage, both under the Waring system, and under the ordinary surface system, has been done in the city, and is now prosecuted daily.

Dr. Henry J. Winn, Health Officer of the city, reports that, in the month of June, 1885, the death rate was only ten in the one thousand per annum. June, July and August are known as the healthy months here.

MORTUARY RATE.

For some years past the death rate has not exceeded sixteen in the one thousand per annum. The death rate among the negroes has been greater than this figure, and the death rate of the whites lower.



West End Grammar School.

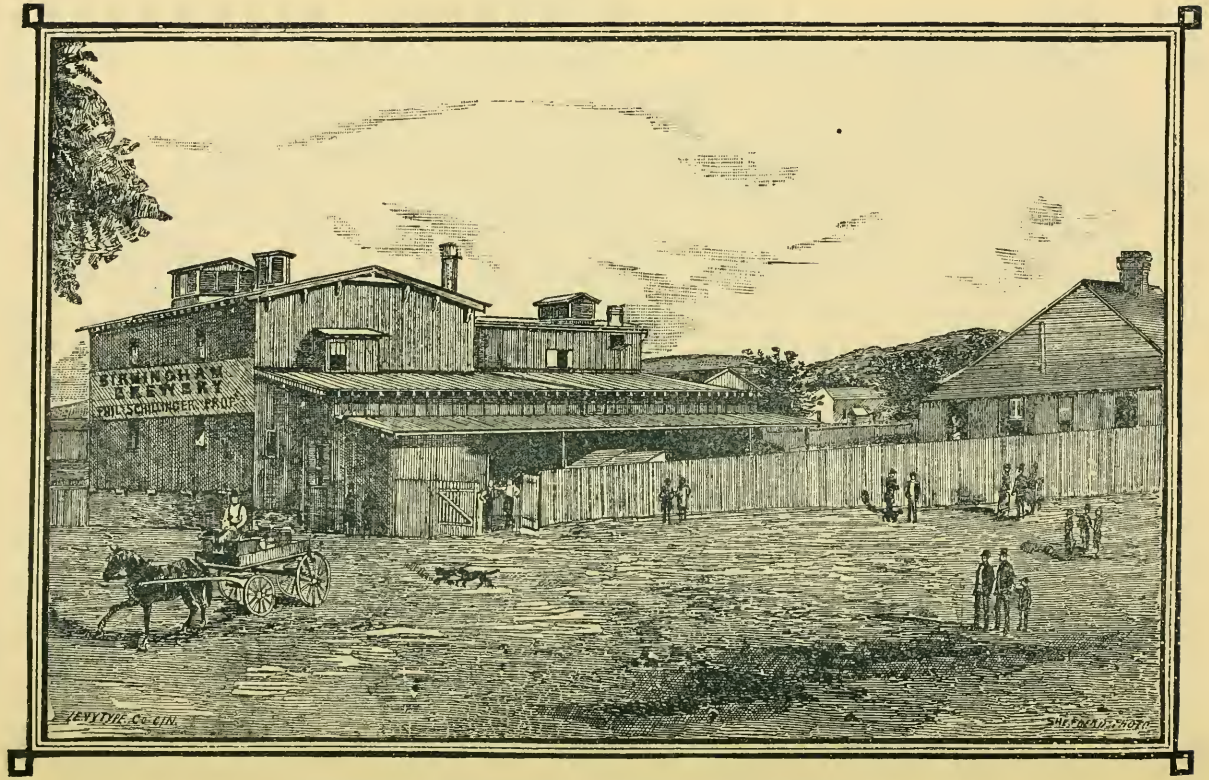
The death rate of Manchester, England, is given by Robert P. Porter, of the U. S. Census Bureau, at 27 in the 1,000; Sheffield, 21; Leeds, 22; Huddersfield, 23. The Boston rate is estimated at 23 in the 1,000; San Francisco, 19; New Orleans, 24; Atlanta 19; Chicago, 31; Selma, Ala., 26; Birmingham, Ala., 16.

The sanitary statistics of Birmingham have had to contend with an unacclimated population entering unaccustomed fields of labor and increasing some 15,000 in the past five years, and collected from all climates.

They have also, as has been stated, been encountered by imperfect drainage and sewerage in the city. The comparative exhibit as shown above is conclusive evidence of the natural salubrity of the climate.

There are no malarial swamps within many miles of Birmingham. Dr. Winn, in referring to local causes of disease, says: "Our location is one to which we have only to apply our knowledge of the elementary principles of modern sanitation to effect a complete avoidance of all local causes of disease, and I confidently anticipate the time when our city will become a health resort of high repute. Village Creek, from which the city water is obtained, has its origin in a number of bold mountain springs, some six or seven miles to the north of the reservoirs. It is naturally a pure and healthy water, containing some lime, and possibly a small proportion of magnesia. A Company is now organized with a view of adding to the water supply by laying pipes to Five Mile Creek. This would insure an abundant supply of the purest mountain spring water for 100,000 people."

On the subject of health organization, the same authority says: "The Medical Faculty of Jefferson county is thoroughly organized. The County Medical Society is a legal organization, under State protection, and is the legal Board of Health of the county. In this county the Society maintains an excellent *esprit du corps*. It holds monthly meetings, and a wide range of cases occurring in private practice are discussed orally, and in writing, besides the regular order of prearranged business. The system of examinations for applicants to the practice is rigid and comprehensive. If the applicant be awarded a certificate from the Board of Examiners, it must be registered at the office of the Judge of Probate."



Birmingham Brewery, Phil. Schillinger, Proprietor.

"Reports of the Health Office," Dr. Winn says, "are frequently made to a committee of physicians, who meet specially to examine and discuss them, and at the same time to consider all the questions affecting the public health."

The climate of Birmingham is delightful. No case of sunstroke is on record. The nights are always pleasant after the hottest day. Snow is rare in winter, and never covers the ground longer than two or three days. Many successive winters pass with no snow. Garden vegetables may be grown in mid-winter, of certain varieties, and healthful diet is cheap at all seasons.

The streets and sidewalks of Birmingham are paved to a great extent by the crushed slag from the furnaces. When slag is exposed to the moisture of the air certain changes take place. Mr. Alfred F. Brainerd, Analytical Chemist, resident in Birmingham, has tested these many times. He pronounces the slag pavements promotive of health. Calcium sulphide and water produce lime, and sulphuretted hydrogen, the presence of the latter being recognized even in the strong sulphurous smell which the freshly laid slag emits.

This slag from the St. Louis furnaces is sold there at good prices. The Birmingham furnaces donate to the city all it can haul away. Glass is often made, in some places, from it, and it is converted also into large blocks, used for building, instead of stone or bricks. The city owns a crusher operated by steam, and the wagons deposit it on the streets from the crusher at the furnace.

WHILDEN
&
CAMPBELL

CHAPTER X.

THE SUBURBS.

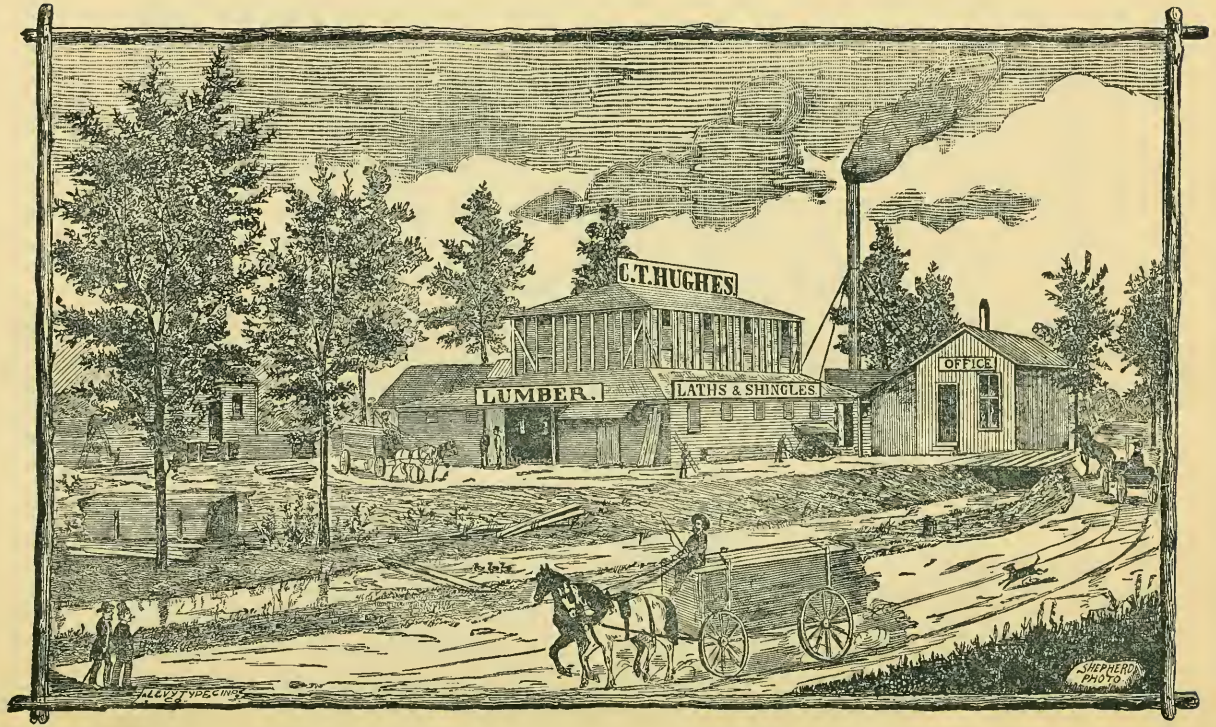
The men of affairs who permanently reside in Birmingham are even now preparing to avail themselves of the rare facilities and opportunities afforded by the natural advantages of the suburbs of the city for summer resorts. Already lines of street railway are being pushed along graded paths into the mountain elevations to the North and to the South. Here are to be found lovely spots for private residences, only fifteen minutes easy ride from the heart of the city. Here far above the smoke and dust and din of busy life, an Arcadian quiet awaits the tired merchant. Delightful breezes, uncontaminated by foul odors of the streets, lure him to domestic repose. A panorama of rare beauty is stretched below him; scenes of activity in the bustling streets; the ceaseless throbbing of the great furnace engines; the rolling of freight cars going out with great loads of iron for the Eastern and Western markets, and coming in with the breadstuffs for the bread winners; the green farms on the border, and the hundreds of cattle browzing there, all attest the realizations of labor and recall the recluse to consciousness of his own enjoyment of rest beyond and above it all.

There is probably no city in the Union more fortunate in the adjacency of varied and attractive scenery, associated with inviting suburban lots for residences, than this one.

THE PARKS.

AVONDALE

Is one and a half miles from the center of the city, reached now by a line of street railway running to the gate. It is the property of a private corporation, It contains upwards of forty

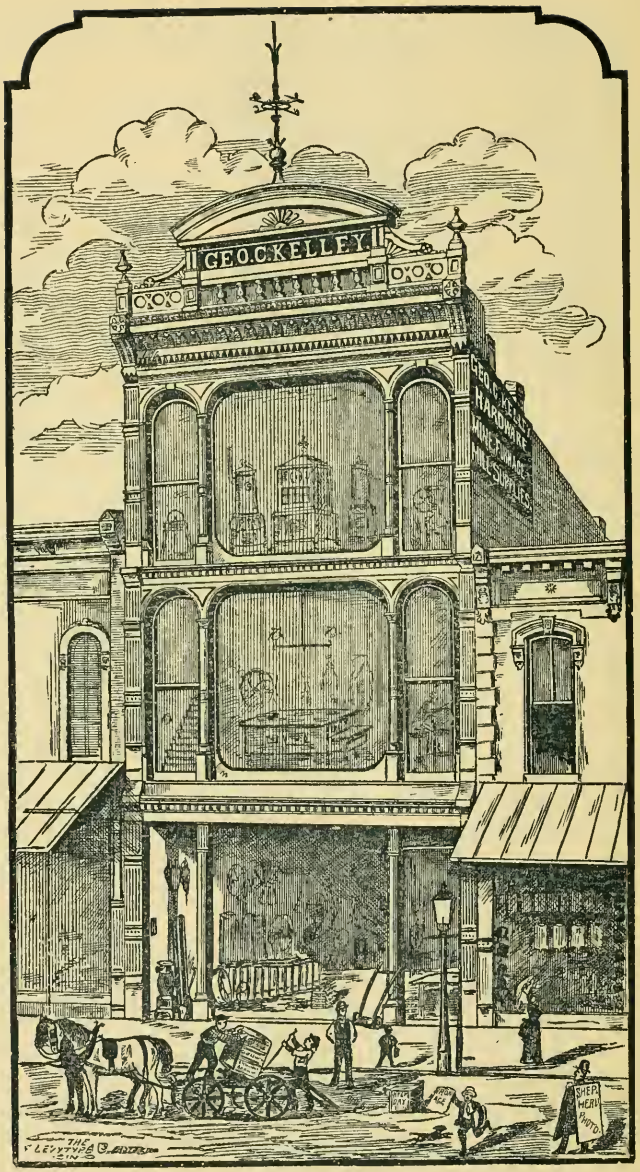

C.T.HUGHES
LUMBER.
LATHS & SHINGLES
OFFICE
SHEPHERD PHOTO.

acres, divided between valley and mountain ridges of romantic aspect. Bold springs shoot out from the mountain sides, and hurry their waters over rocky beds into forests and fields in the distance. Dense shade covers the mountain side. A lovely grove, shaded with great oaks, cleared of undergrowth, is supplied with many colored seats, and with a spacious stage, and music stand, for dancing, where quiet, or hilarity, may be indulged in harmony with the taste or feelings of the visitors. Here on Sundays, or holidays, great numbers of people, well-dressed and well-behaved, delight to gather and roam or recline in unbroken shades and cool air. Here moonlight assemblages of the young are held and happiness rules the hours. Saturday, picnics of happy school children make a spring and summer feature of Avondale Park and its privileges.

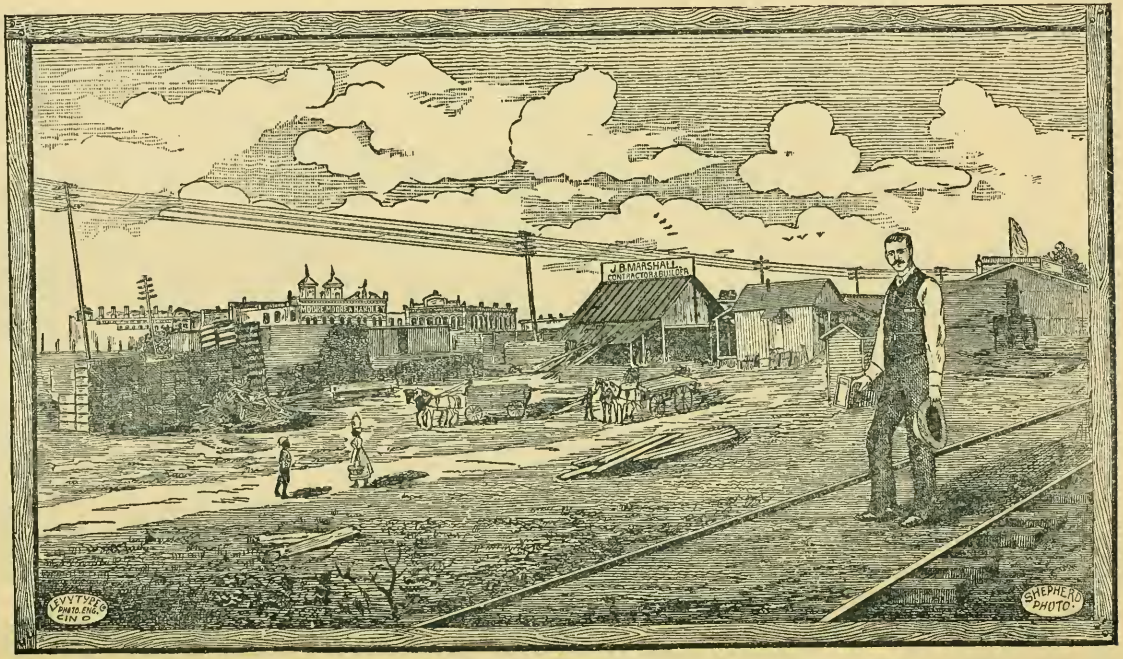
LAKE VIEW.

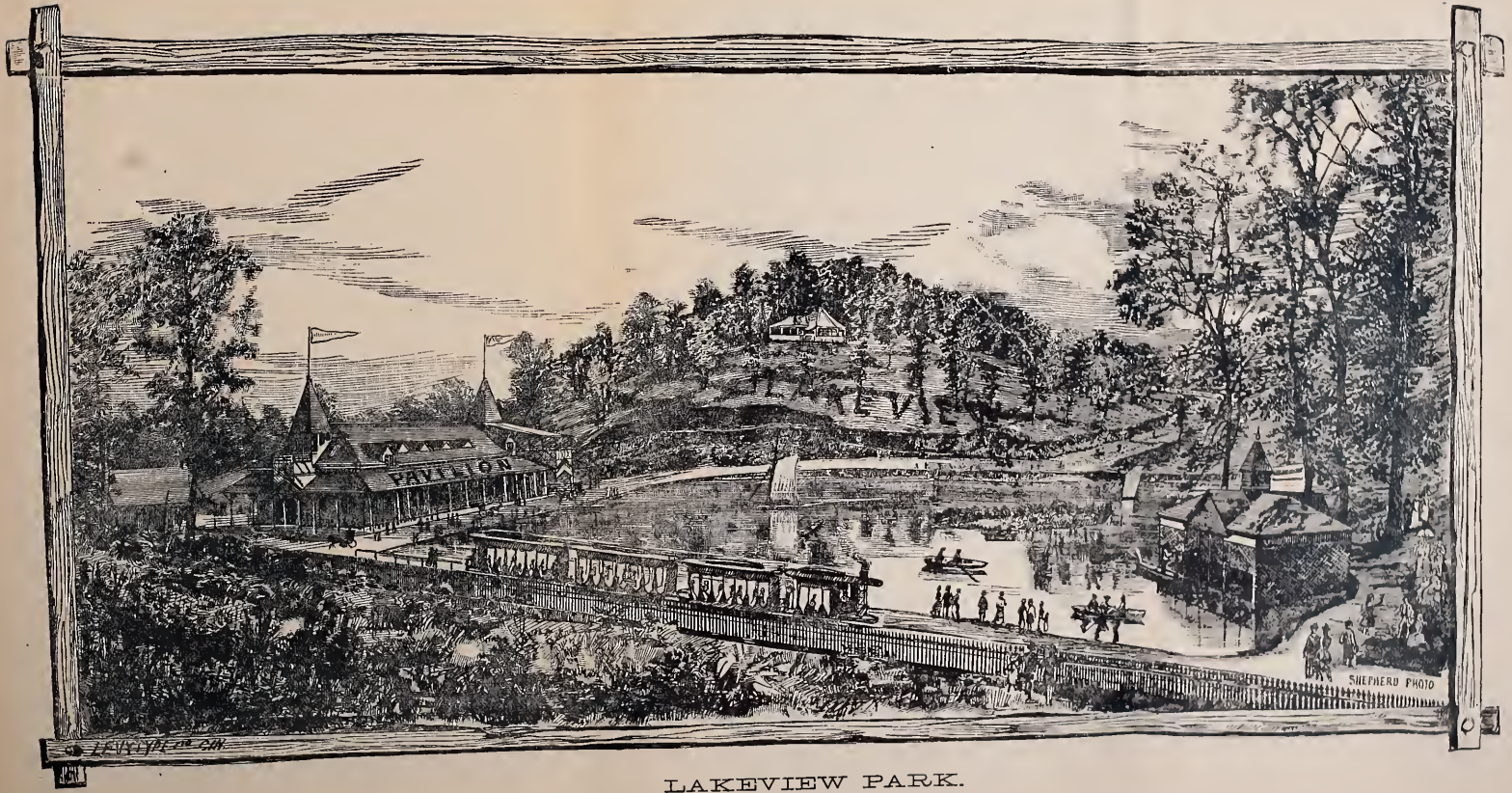
The Elyton Land Company owns about 1,500 acres of wooded land, one and a half miles from the city. Plans are now being executed to convert a part of this semi-mountainous area into a grand, magnificent public park. Already a street railway, with steam motors, reaches to its entrance from the center of the city. Already thousands of dollars have been expended in reclaiming and exposing the wild forests of Lake View. Broad gravel carriage roads begin to wind their way, amidst the impending rock-crested hills; rustic seats and gaily painted swings cluster along the mountain sides; numerous springs gushing forth are trained to form a lake on whose bosom gondolas float and white swan swim, in the shade of the peaks which overhang it; a club house stands at the head of the water where capacious baths and a restaurant with modern appointments provide for the convenience of visitors. Along the line of irregular hill tops overlooking the park, the Company is erecting cottages for the occupancy of inhabitants of the city during the summer season. Not one mosquito can live on those heights; evening or morning air must ever be laden with coolness there; the man of business can almost look into the door of his city office below from his mountain retreat, and, by telephone, may whisper to clerks as securely as if on the spot in person.

Lake View is a happy conception. Here Nature without mutilation is beautified. Ever varying landscape pleases the eye, and restores vigor to the weary mind. Hundreds of workingmen


GEO. C. KELLEY
HARDWARE
SHEET METAL
STOVES
SHEPHERD
PHOTO

who cannot afford to drive a carriage on holiday even, will find in the meandering promenades exposing new and pleasing scenes over the hills at every turn, and in free seats of the hillside, a delightful source of enjoyment and repose. The more fortunate who may drive or ride through the valleys and around the mountains to their peaks, will often repair to the park for this most exhilerating exercise and delightful recreation.


J.B.MARSHALL
CONTRACTOR & BUILDER
SHEPHERD PHOTO.



LAKEVIEW PARK.

CHAPTER XI.

PUBLIC EDUCATION.

That the wealth of a State depends upon an alliance of its productive and consuming powers is a proposition in practical economy that has been long demonstrated by experience. In this age of machinery, the skill, rather than the number, of operatives is the controlling factor in industrial progress. That which multiplies the productive powers of the people in the aggregate will conserve the industrial forces of the State, and naturally become a legitimate subject for public consideration and public support. Public education in this country to-day is maintained not merely from motives of political expediency or public duty—it is a prime necessity of society. The complex mechanical agencies of our commerce, the varied mechanism entering our trades and industries, are too powerful and intricate to be manipulated by the unschooled and illiterate masses. These considerations alone, to say nothing of the duties of intelligent citizenship, amply justify the maintenance of a system of public education in an industrial center like Birmingham, and the flourishing condition of her public schools furnishes the most convincing evidence of the fact that amidst the din of her commercial activity and the smoke of her furnaces and foundries, she has not been unmindful of her duty to the next as well as the present generation. She has triumphantly grasped the too oft forgotten truth, that the harmonious developments of the head, the heart and the hand secures at once the best interest of the industries of the State, and furnishes a substantial guaranty of industrial prosperity, of social purity and commercial integrity. This truth our young city promptly embodied in her public school system, as we proceed to prove.

From the very foundation of the city the people of Birmingham have recognized the fact that the moral and intellectual de-

velopment of society must keep pace with the industrial development, and that system which supplies moral and mental training to the masses, which creates the skill and consequently the wealth of a community, must above all others be preserved and encouraged. The public school system of Birmingham has thus been founded upon the necessities of the city, and in its present magnitude we see the autograph of popular convictions.

In September, 1883, the schools were reorganized and placed under the charge of Prof. J. H. Phillips, A. M. By the enactment of a State law the Mayor and Board of Aldermen of the city were relieved of the management of the schools, and a Board of Education created in their stead consisting of the following gentlemen: Hon. A. O. Lane, president; J. L. Watkins, vice-president; Samuel Ullman, Alonzo S. Elliott, David D. Smith, W. J. Rushton and C. P. Williamson.

The funds by which the schools are supported are obtained from various sources. But by far the greater part are obtained by appropriation from the revenue of the city. This sum is supplemented by the amount received from the school fund of the State, the city poll tax and a small incidental fee charged each pupil in attendance. The direct appropriation made by the city for the current scholastic year is $12,200. In addition to this sum the city has been authorized to issue bonds to the sum of $20,000. This latter amount has already been expended in the purchase of school lots, the erection of elegant buildings and the furnishing the same with suitable furniture.

With reference to the general system adopted for the arrangement of the school buildings we quote from Superintendent Phillips' report for 1883--4:

"I am thoroughly impressed with the fact that no other institution in our city contains so great promise of permanent good to the community as our public school system. To realize this promise, our school facilities must be enlarged, and better sources of revenue must be devised to build up and sustain such a system as the city demands. The public schools of the city, under your wise and conservative management, are now thoroughly organized with a system established whose operation needs only to be enlarged and perfected to make our schools in standing equal to the best in the State. The buildings erected by the city from time to time should be constructed and located with reference to a general plan or system adopted by the board. I beg to recommend the plan of erecting eight room buildings to accommodate the Primary and Grammar School grades; these buildings should be distributed around the city, forming the circumference of a circle. The buildings already erected on the north side of the railroad are suitably located with reference to such a system. To complete the sys-

tem a High School building should be erected near the center of the city as soon as the finances of the city will justify the expenditure. Such a High School would be easily accessible to pupils from all parts of the city who shall have completed the course prescribed in the Grammar Schools. The general plan here outlined is perfectly feasible, and easily adjusted to the growth and demands of the city."

The above recommendations were made a little over a year ago, and to-day the plan outlined has been consumated in every particular. We know of no other city that can record such rapid strides in the history of its public school system. We have to-day three elegant grammar school buildings and one high school building for the use of whites, and two comfortable and well arranged buildings for the use of colored pupils. The furniture of these buildings is in the latest and most approved style. All the white schools are furnished with the elegant "New Paragon" single desk, and the colored schools with the Andrews Triumph desk. No schools in the South are better equipped in this respect. The total value of school buildings and other school property is estimated at $50,000.

In order to give the reader an adequate idea of the general character of the work and discipline of the schools the Superintendent's report is again quoted:

"The teachers are enjoined to govern their schools with firmness, but to avoid, if possible, all harsh means of punishment. Corporal punishment has been used only in rare and extreme cases, and then only as a last resort, in reducing to submission a class of pupils with whom no milder argument would prevail. The teachers are impressed with the idea that *teaching* is their chief work in school, and that government, though absolutely necessary as a means, must always be regarded secondary. "*They govern best who govern least,*" is a principle that may be well illustrated by a successful teacher. If the pupil is furnished with work, and made to feel pleasure and interest in that work, he will have little disposition to do wrong. The child's energies, physical, mental and moral must be influenced and directed by the teacher. This cannot be done by force; that would be brutal and irrational. It cannot be done by *moral suasion* alone; that frequently makes the child callous and morally insensible. The "*minimum* of corporal punishment and *maximum* of moral suasion" is not a good rule to adopt in the school room. The *moral suasion* of most teachers consists in scolding, fault-finding and dry lectures on the ethics of conduct. Such a course soon becomes offensive to the child, fails to secure the co-operation of his will and affections and usually hardens him to such an extent as to render all moral treatment futile. The minimum of punishment and the minimum of moral suasion, combined with the maximum of pleasurable work is a better rule, more rational in principle and more successful in operation.

In carrying out the principles of government laid down above, special attention has been given during the year to the moral and literary training of the pupils. In the homes of many children, the advantages for literary culture are very

meagre. A family bible may occupy the parlor table, but the child is given to understand that even *that* is for ornament and not for use. If any books at all are placed within his reach, they are too profound for his perusal, and are cast aside. On the other hand, he finds sensational story papers gratuitously scattered in his way. He is first attracted by the blood curdling illustrations perhaps, but soon acquires a taste for the story, and unconsciously imbibes the principles that are to give direction to his youthful energies—he has already learned the alphabet of crime.

In the windows of the news dealer, on the counter, often by the side of text books and school supplies, he finds this poisonous literature displayed in an alluring manner. Parents and teachers deplore this state of affairs; churches and schools use moral suasion in vain and deprecate the results. But what have they done to remedy the evil? They stand aloof and cry: "Don't touch, don't touch," but fail to supply their children with reading matter of an elevated and interesting character. This, in my judgment, is too important a matter to be overlooked in our public schools, and though the work of the past year is hardly more than a beginning, yet the results have been exceedingly gratifying. In all of the schools of the city much good work has been done in this direction, a work that cannot be expressed in words nor estimated in percentages. The celebration of the birthday of prominent American authors, together with a systematic study of their work has proved an incalculable benefit to the pupils by awakening an interest in the personality and works of good authors and cultivating a taste for substantial literature. In the lower grades the children are treated with stories of an interesting character, adapted to their comprehension. In the higher grades also the pupils are permitted to read good papers or books in connection with and supplementary to the required reading. Each pupil responds to the daily roll call, by reciting some literary gem of his own selection. The good effect of this course upon the conduct and manners of the pupil is quite apparent. Pockets in which dime novels and sensational stories were concealed at the opening of the session, have given up their contents and now claim a better literature. To enlist the sympathies and direct the moral energies of the children, a Band of Mercy has been organized in each grade of the white schools. The Band of Mercy is a new order of chivalry, whose leading principles are "protection to the weak" and "kindness to all harmless living creatures." The great object of the organization is to inculcate the sentiments of kindness and mercy in the hearts of the young, and thus lay the foundation of character. About one hour each week is devoted to this kind of moral and literary training, and the results have been very gratifying. By this means good discipline has been greatly facilitated, and teachers in some of the grades have been enabled to dispense entirely with corporal punishment."

From reports of 1884–5:

"In all elementary schools the staple and substantial studies must ever be the ordinary branches of language, mathematics and geography. These are after all the keys that must unlock for the child the world of nature and of man, and as such must transcend in importance any special forms of mechanical skill. But "Education by doing" is the phrase that most aptly characterizes the work of our teachers and pupils. Special attention is given in our elementary schools to object lessons, map drawing, language analysis by diagramming and industrial drawing. The work of our schools in these special lines during the past year has been most gratifying, and the degree of facility and skill acquired by even young

children seems almost incredible. These features stimulate self activity and independence in the pupil, and lead him from the ruts of servile imitation to the broad highway of original discovery and invention.

In the presence of so much crime, lawlessness and cruelty, it behooves our schools to give special attention to inculcating lessons of mercy, kindness and justice to all creatures, human and dumb; and I know of no more effective method of imparting such lessons than the memorizing of gems of poetry and choice selections from the best English and American authors, illustrative of the feelings and emotions of the child-heart and of the great moral truths underlying our human nature. It will be seen that literary training is thus made the basis of moral culture. Simultaneously with the taste for the good and beautiful in literature we endeavor to cultivate in the child the more exalted sentiments of our nature, the love of God, of man and of nature, the elements of that heart religion fundamental to all morality and civilization. The

TRUE MEASURE OF PROGRESS

in our schools, however, is not to be found in building systems of courses of study, but in the operation of silent influences brought to bear upon the pupil by the earnest, faithful teacher; the development of latent tastes and powers, and the direction of his self-activity for the accomplishment of good; the stimulating of his energies to the investigation of nature's hidden treasures and his soul to the appreciation of the true, the good and the beautiful in all things."

No further elaboration is necessary to prove that Birmingham's public schools already stand in the front rank of the schools of the country. Superintendent Phillips, the fortunate instrument in the hands of the Board of Education for the establishment and conduct of the entire system, possesses a tact and administrative ability rarely found in so young a man. He is a thorough educator, and is devoted to his profession. A native of Kentucky, he came here from one of the Northwestern States with a well established reputation, and, entering upon his work with the zeal of an enthusiast, he has not only acquired professional success, but has secured the personal respect and esteem of the whole community by uprightness and courtesy of conduct in general society.

Residence and Office of A. S. Austin, Woodlawn.

CHAPTER XII.

THE RAILROADS.

Up to the year 1871, the Alabama and Chattanooga railroad was the only line within reach of the trade of Jefferson county, and at that time this, the only road, was badly equipped, was in debt, and was equivalent to well nigh nothing as a channel of commerce, or for passenger traffic. Now there are three great trunk lines crossing each in the heart of Birmingham, and each with many trains each day passing on quick schedule time over their length. These roads are the South and North, being a section of the Louisville and Nashville system; the Alabama Great Southern, being a section of the Queen and Crescent system, and the Georgia Pacific, being a section of the Richmond and Danville system. Numerous short branch roads tap the coal mines along the route of each.

The South and North road of itself transports about 1,500,000 tons of coal per annum. Within a few years great coal depots have been established at Montgomery, Mobile, New Orleans, Eufaula and Vicksburg. Many inland towns where, before their construction, no coal was consumed, now buy largely of the Alabama supply furnished by these roads at their doors. Notwithstanding the abundance of woodland all along along the line of the railroads, the substitution of coal in private and public houses for firewood, has been remarkable. Convenience and economy are found to be with the coal bought at the mines, as against the wood cutting and wood hauling in a territory where labor for heavy work is scarce.

The expenses of construction lying against all the roads crossing at Birmingham, passing as they do through a mountainous country, were heavy. Probably $40,000 per mile would not be too high a figure for the building of the South and North road.

The Georgia Pacific, projected to run from Atlanta to Columbus, Miss., is completed except twenty-five miles of gap west of Birmingham, which gap is now being closed. This route passes through the famous Walker county coal measures. These measures produce the best quality of coal in the State; particularly adapted to ocean transportation, as it does not crumble from the effects of salt atmosphere.

Before these roads were built only some twenty-seven per cent. of the lands of Alabama were taxed. Now about sixty per cent. are taxed. Increase of towns and farms along their entire lines show that the State's aid given to them has returned a rich interest to the public treasury. The convenience of the public has been greatly promoted by the establishment of centres of distribution of merchandise and money throughout the State. Large stocks of goods and banks of exchange exist at Huntsville, Decatur, Birmingham, Selma, Montgomery, Eufaula and Demopolis, all interior towns. These are the effects of the railroads.

The gross earnings of at least one of these trunk lines are more than 300 per cent. greater now than they were ten years ago, or before the success of Birmingham.

These lines give Birmingham connection with Louisville through the centre of Tennessee, and with Cincinnati, and with Atlanta; also with New Orleans, Mobile and Vicksburg. The completion of the Georgia Pacific to Columbus, Miss., with a branch to the new town Sheffield, which will probably soon be accomplished, will open the markets of Memphis, St. Louis and all the towns of the Mississippi valley to Birmingham coal, pig iron and manufactures of various kinds.

MEMPHIS AND BIRMINGHAM.

The railroad which will at an early day be completed from Memphis to Birmingham is second to none in importance to the latter town. This road will open the coal and iron markets of Little Rock and Kansas City to the mines and iron manufactures of the Birmingham district.

The proposed extension of the road reaching in this direction from Columbus, Ga., will open another route to the sea.

THE MOBILE AND WESTERN.

This road is completed to Jackson on the Bigbee river, thirty miles out from Mobile. Its object is to connect the Walker coal fields with deep water at that port. It will pass through the most

fertile agricultural region of Alabama in its entire length. It is of the utmost importance to all the completed lines of road to which Birmingham turns for support.

WATER LINES.

The river lines of transportation tapping the mineral resources of Alabama are remarkable for their numbers and connections. The Louisville and Nashville road crosses the Tennessee at Decatur, and the Alabama at Montgomery. The Alabama Great Southern crosses the Warrior and Tombigbee, and the Mississippi at Vicksburg. The Georgia Pacific crosses the Coosa and the Bigbee at Columbus, Miss. The road coming this way from Columbus, Ga., will, of course, touch the Chattahoochee at that point.

It is believed to open the Warrior and Coosa rivers to light draft steam navigation, will allow coal to be unloaded at Mobile at $1 50 per ton. In view of the early inevitable transit of steamers between the Pacific and the Atlantic oceans, across the isthmus of Central America, Mobile must become a great coaling station and shipyard and manufacturer of iron.

THE FUTURE OF ALABAMA.

We have already established the fact that the coal fields of Alabama are practicably inexhaustible. We have shown the present and prospective transportation lines through which their product must reach the commerce of the world. The coal of Great Britain has made that Kingdom the most powerful commercial nation in the world. The coal of Pennsylvania has made that State, combined with the riches of an agriculture devoted to the support of its mining and manufacturing classes, and creating great manufacturing and commercial cities, the foremost of American Commonwealths.

Events are rapidly converging toward Alabama as the great coal and iron region of the world.

RAILROAD LANDS.

The railroads passing through the mineral lands of Alabama encourage immigration. The large German colony, called Cullman, in honor of its founder, established in a most prosperous condition along the South and North division of the Louisville & Nashville Road, is greatly indebted to the liberality of the road. The roads all own valuable mineral and agricultural lands now

open to colonists. They are now selling liberally to agents of colonies and to individual settlers.

"Geologically, these lands belong to the regions of the coal measures and to the distinct agricultural division of the coal bearing sandstones, conglomerates and shales. The prevalence of one or the other of these rocks determines the character of the soil resulting from their disintegration. It can be classed as a light, sandy loam, of a gray, more or less yellowish or brownish color, warm, easily worked, and, like most of the upland soils, wanting in vegetable matter, deficient in lime and phosphoric acid, with a fair amount of potash. The percentage of clay varies according to the extent of the presence of those of its constituents derived from the disintegration of the shales. The best grades of these soils, capable of the highest improvement, are the brown or yellowish loams, with a subsoil of deeper tints, and which can be said to form three-quarters of the whole area of the arable lands. These lands are covered with a vigorous and varied timber growth, prevailingly hard-wood trees, upland oaks, post oak, Spanish oak, scarlet oak, tan-bark oak, black oak, fine chestnuts, upland hickories, highland black-gum, some scattered tulip trees—all more or less mixed with short-leaf pine, and with an undergrowth of dogwood, sourwood and sassafras. It is by the vigor of the growth of the individual trees that the natural strength of the soil can best be estimated. Whenever the soil becomes more sandy and lighter the pines are found predominating. Their appearance, however, may in that respect be misleading, as after the removal of the original timber growth the pine takes almost entire possession of the soil, whatever its quality might be. On the poor, sandy, dry ridges the stately and valuable short-leaf and loblolly pine are replaced by the worthless scrub or mountain pine.

The stand of the pine timber is very heavy, yielding timber of an excellent quality, giving rise to an active lumber industry along the railroad lines. The lands, denuded of their marketable timber growth, are easily cleared, and can be obtained at very low rates. Considering the facilities with which large flocks of sheep and herds of cattle can be kept, the required amount of manure that can be made, and the low cost of fencing and building by the cheapness of the lumber, the man of small means will scarcely find better opportunities to start out on the road to achieve a homestead, affording him a more independent existence than by settling these lands.—From the Birmingham Daily Age.

CHAPTER XIII.

FARMING LANDS.

Agricultural lands in all parts of Alabama are exceedingly cheap when put on sale. The explanation of this fact is to be found in the general scarcity of money seeking investment in realty of that character, and impediments to negotiating loans needed to cultivate it, after purchase, on sound principles of agriculture. The cash capital resident in the State finds quicker and larger returns in various kinds of commercial ventures, and in manufactures, small and great, located in or near the towns, and this will continue to be the case until increased demand growing out of the labor of those industries, shall make a home market for agricultural products of neighboring farms.

The great disproportion of arable fields to the supply of wages, and labor, is a manifest cause of low prices of lands in Alabama. A not inconsiderable part of the fertile lands of the State, could be bought, cash down, for the market value of an average single crop of cotton taken from them.

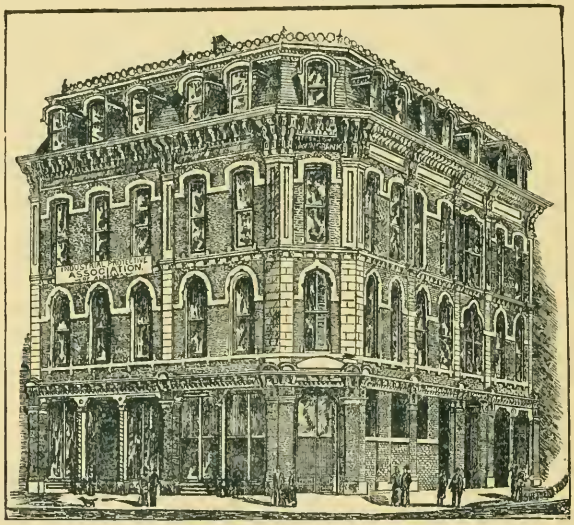
Annual rents taken from these lands bear a much nearer relative proportion to their intrinsic value than do the prices commanded by transfers in fee simple. Nevertheless in the more densely populated regions near the trunk lines of railroad there is a steady and healthful appreciation of saleable values in lands. Everywhere there is an abundance of timber for home demands, and excellent water. There are no swamp or overflown lands away from the coast.

It is a fact no less interesting to the immigrant than remarkable in itself, that every county in Alabama will produce in abundance all the field crops, orchard and vineyard products which any one of the number may do. The slight exception to

this general rule may exist in the adaptibility of the Gulf Coast to some tropical fruits which the mountain counties will not allow. Every county in the State will readily produce cotton, wool and silk, all for conversion into wearing apparel, and at the same time produce the vegetable and animal diet habitually consumed in greatest variety by the most enlightened and wealthiest of populations in all countries.

Alabama lands are readily convertible into mixed or diversified farming.

If it be admitted, for example, that the medium class of Ohio farm lands will yield fifty bushels of corn per acre, the medium class of Alabama lands will yield pea-nuts, chestnuts, sorghum



seed, yams, etc., in sufficient quantities per acre to fatten as many pounds of pork here, as fifty bushels of corn will fatten in Ohio.

In place of bluegrass for grazing in Illinois, we here have for perennial winter pasture grass, white and yellow clover, and the vetch; and for annuals for winter grazing, rye, barley, wheat and oats. There are few winter days so stormy or cold in Alabama as to compel the farmer to shelter and feed his stock away from the pasture. On the other hand, pasturage is practically closed several months of the cold season in Illinois, and expensive shelters are then necessary.

Available pasturage in Alabama has not been fairly presented until the merits of the two grasses, vetch and Bermuda, in combination on the same sod, shall have been brought to view.

The vetch is a leguminous, late fall, winter and early spring pasture grass, and though botanically classed as an annual, itself seeds the land so heavily as to be practically perennial. The Bermuda is a late spring, summer and early fall grass, its surface rooted, and is practically indestructible from drouth, or seasons of any kind.

These two grasses interfere in no degree with each other when set on the same sod. Together they afford from the same enclosure perpetual pasturage of a most valuable and nutritious nature—the one for that half the year in which the other fails naturally to appear. There is no substitute for the winter vetch in the North or West, and the Bermuda of Alabama is equal in all pasturage qualities to any summer grass to be found elsewhere.

The conveniences of agriculture are promoted by an abundance of postoffices, by numerous villages, towns, cities, by a plentiful supply of banks of deposit and exchange, and by $27,000,000 of railroads, besides the river lines of transportrtion. Legislation is now being directed toward a reformed system of wagon roads. Especially is this the fact on the wagon roads leading out from Birmingham. These are required to be Macadamized to the extent of an annual tax on the county.

Birmingham is situated in Jones' Valley. This valley contains many thousands of acres of excellent farming lands. The lands produce corn, wheat, red clover, sorghum, cotton and all kinds of truck crops adapted to this climate. They are composed of a sandy loam, which, when plowed deep, retains moisture well in seasons of drouth, and is easily drained of surface water. These lands respond eagerly to the use of fertilizers, and the yield of many of the crops named, and many others not named, is highly satisfactory as compared with any lands in the State. The natural pasturage is excellent. " Hundred of milch cows, belonging to dairymen on the suburbs, and to private families and private boarding houses in the city, are driven every day from April to November out to the natural pasture grounds surrounding the city, where they browze all day on the wild clover covering the earth, and growing from four inches to eighteen inches tall.

Only skill, energy and small capital are required by a farmer to prosecute a successful business around Birmingham. Farms rent from three to six dollars per acre within two to three miles of the center of the city, and sell from $75, to $150, the acre.

Chapter XIV.

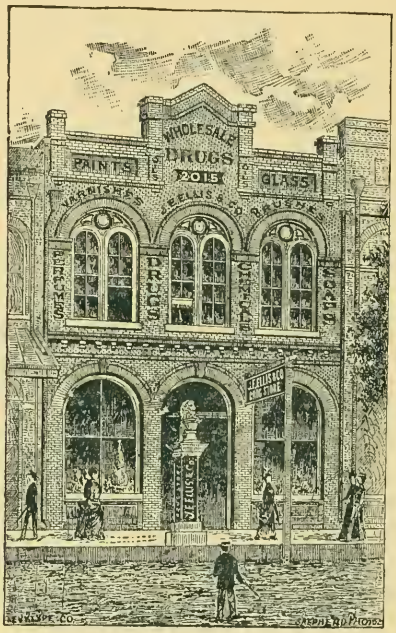
EARLY REPRESENTATIVE MEN.

MAJOR THOMAS PETERS.

Thomas Peters came of respectable parentage of Wake County, North Carolina, where he was born in 1829. His early life was adventurous and enterprising and spent in the South-western States. He was a Confederate soldier from the first to the close of the war for Confederate independence. His military duties created the opportunity by which he became well acquainted with the mineral wealth of Alabama. It was known to him that the Confederate arsenal at Selma had cast cannon of Alabama iron, remarkable for its adaptibility to this severe test. As soon as the war terminated Major Peters, alone and with small encouragement from others, began to explore and locate lands in the mineral region of this State. He was penniless then, and travelled afoot over the mountains. He soon acquired fortune by his energy, judgment and enterprise in operations in those lands. He was among the earliest, bravest, most intelligent and most deservedly influential settlers of Birmingham. His charities were proverbial and his sympathies always open to merit. He died in Louisville, where he had gone to superintend the mineral exhibits from Alabama at the great Exposition of 1883, literally "with harness on his back." His body was returned to Birmingham, and the demonstrations of universal public grief on the occasion of its interment here, were proof of his hold on the affections of this people, whom he well served.

The Confederate cannon captured at Selma by the Union forces, were subsequently sold by the Government. It is related

that a purchaser expected when making his investment to break the guns into pieces for economy of transportation. This measure he proceeded to carry into effect, but finding it impossible to break the iron, he was forced to undergo the additional expense of hauling it intact. It is said no gun made of Alabama iron has been known to burst.



COL. J. W. SLOSS.

Is a native of Northern Alabama. Colonel Sloss owns a beautiful residence with extensive grounds in the central part of the city, and is an acknowledged factor in the social life of Birmingham. He is President of the South & North Alabama Railroad Company, from Decatur via Birmingham to Montgomery. He is also President of the Sloss Furnace Company, located on the suburbs of the town, which is probably the wealthiest corporation of the kind in the State, and is active in other industrial local enterprises. Colonel Sloss is the Superintendent of the Sunday School of the First Methodist Episcopal Church South of Birmingham, and is an active, and more than ordinarily intelligent, sympathizer with all social reforms. He is President of the Alabama Chautaqua Association, of Lake De Funiac, Florida, and takes practical interest in its work.

His sons occupy responsible positions in the Sloss Furnace Company, and are fully identified with the interests of Birmingham.

Colonel Sloss was one of the original projectors of the first coal mine opened, and the first furnace put in blast in this district, and being a pioneer here, is yet increasingly active in the progress of the good work he so substantially inaugurated.

HENRY F. DE BARDELEBEN.

This public spirited gentlemen is a native of Autauga County, Alabama. With Colonel Sloss and others, he built the Eureka Furnace at Oxmoor, the first in this district. He was the prime mover in opening the Pratt Coal Mines, and once owned, at least, a controlling interest in this, one of the largest coal properties in the world. He was the prime mover in building the Alice Furnace, which opened iron manufacture near Birmingham. These were the decisive enterprises upon which the city began to grow in public confidence. DeBardeleben and Underwood, now own the Mary Pratt Furnace, one of the most beautiful, substantial and well ordered works of the kind anywhere to be found. The management of this furnace takes character from the junior partner, a man destined to go higher in the industrial future of Alabama; happy the State had she more like unto him. Mr. DeBardeleben, until a few weeks ago, gave his time and energies to the great Henry Ellen Coal Mines on the Georgia Pacific Railroad, twelve miles east of Birmingham. These mines are destined to rank among the great collieries of the world. After placing this splendid property on a firm footing, he then organized a new mining and furnace company at Jonesboro, thirteen miles southwest of Birmingham, on the Alabama Great Southern Railroad. The capital stock is $2,000,000. Mr. DeBardeleben holds largely of it—the other part being divided between Charleston, South Carolina, and Manchester, England. He is President and General Manager of the corporation. He says in five years his company alone will double the present output of pig iron in Alabama.

Mr. DeBardeleben's private residence in the city is a handsome three-story brick, in imitation of granite, and is surrounded by capacious grounds. He has been the most successful organizer of great industries who, probably, ever lived in Alabama.

DR. HENRY M. CALDWELL.

This influential citizen is typical of Birmingham life. Born in Greenville, Butler county, Ala., forty-nine years ago, he grew to man's estate there, and chose the profession of medicine as his field. In his twenty-first year he graduated at the celebrated University of Pennsylvania, in the medical department. True to the land of his birth, when his services were needed, he entered the medical staff of the Confederate army. He served first as Assistant Surgeon in the 33rd Alabama Infantry, and, later in the progress of the war, was assigned to post hospital service. After the disbandment of the army he returned to the general practice of his profession, which position he maintained for two years, when he permanently entered commercial and financial circles.

H. M. Caldwell

Coming to Birmingham in 1875, Dr. Caldwell served, for a time, as mayor. He was made President, the second in order, of the Elyton Land Company. The financial ability of the Company was so low, at that time, that the office was virtually without a salary. But Dr. Caldwell had thoroughly examined the resources of the surrounding region, and had studied their value, when they should become open to the markets of the world. He prompt-

ly decided to place here his life-work. There were various avenues open to profitable employment of energies, such as his; coal mining, or iron manufacture, or real estate speculations offered each fruitful results. He left these to the care of others, and chose for himself that position, which carries the broadest influence which could fall to the possession of any one individual in Alabama. He saw that the direction given to the herculean resources of the Elyton Land Company would not only determine the future of the city, but would sensibly affect the great mining and manufacturing enterprises in the vicinage. He, Col. J. W. Sloss and Mr. Josiah Morris aided the company with their private means in evidence of their confidence.

Dr. Caldwell has been ten times elected to his office, and the salary was, at the last meeting, raised in acknowledgement of his services. The control of a corporation as energetic as the Elyton Land Company requires high executive ability, tact to deal with men and statesmanship to appreciate the relations of the corporation interests to the community interests around it. His office is to provide for the corporation by making provision for the best interests of the city. No one man in Alabama wields a more potent industrial influence, than the President of the Elyton Land Company. When citizens or strangers come to investigate, and to invest in the real estate he controls, his conduct in the premises is often conclusive of their action; hence the State of Alabama is interested in the efficiency and character of the man holding such an office. Often selling thousands of dollars of property in a day, litigation has seldom, or never, followed his transactions in this line. The sales of his Company for the month of March this year, (1886) were $200,000, nearly all in residence lots to *bona fide* settlers for their own use.

Dr. Caldwell is President of the "Caldwell Hotel Company," which is now engaged in erecting, on a commanding eminence in Birmingham, a magnificent six story hotel, from the dome of which the entire city and suburbs, and the country for many miles around, may be viewed.

JUDGE MUDD.

W. S. Mudd came to Jefferson county, from Kentucky, with his parents when a small boy. His father sent him back to his native State to be there educated among older schools than the forests of Alabama then could provide. Before he had reached

his thirtieth year he was elected to the judiciary of his adopted State. He was continuously retained on the bench, by popular elections, until the feebleness of old age forced him to resign in the midst of his last term. There was a conservative feature in Judge Mudd's character to which a democratic constituency always instinctively clings. He was a man of tender sympathies, and Roman integrity. He was never in the rear of practical enterprises calculated to advance the real interests of the community in which he lived. His utterances from the bench were delivered with earnestness, and with such manifest clearness of apprehension, as to inspire great confidence. His construction of the law or the evidence was seldom reversed by the final court of appeal. He died in Birmingham, in sight of the neighboring village of Elyton, where he had reared a large family, and lived a happy and prosperous life.

Judge Mudd was a director of the South and North Railroad Company, and a large investor in Birmingham real estate. He built the "Florence Hotel," a neat and tasteful brick structure, which was the first building of the kind in the city. He was director in one of the banks. Probably no citizen of the circuit of counties which embraced his courts possessed a more substantial and unvarying popularity with all classes of men than he. The city was sensibly touched in sympathy with his last illness and death.

Judge Mudd was not an office-seeker, but his county sent him to the convention which framed the State constitution under which we live, because of his sound statesmanship and strong personal influences.

DR. JOSEPH R. SMITH.

This gentleman, a native of Jefferson county, and born near the present site of Birmingham, now approaching three-score and ten, is a representative of the new, taken from the ranks of the old, civilization; a most active promoter of the interests of Birmingham. He had lived in the vicinity of the city many years as a cotton planter, physician and newspaper editor. His investments are large in the city, and near it. He established at his own expense a large driving park, well shaded, with a circular track of near a mile, in easy reach of the residence portion of the city, kept in order at his expense, whose gates are opened free to the public in summer. He is often seen on the streets al-

ways cheerful, sympathetic and frank ; his presence inspires hope and good feeling around the large circle of his acquaintances. He is one of the few old men met in society, whose confidence in the duties of the present seems spontaneous, as it certainly is inspiring to the workers. Thus in age may yet reside high powers of influence, when hope has not been extinguished by its approach.

Dr. Smith is supposed to be one of the first four whites born in Jefferson county. He remembers the coming to Elyton of the weekly mail, brought once a week by the carrier over the mountain trails on a horse. He remembers the expansion of the saddle bag mail system to the great pouch of the six horse daily stage, as it trotted through the valley to the winding notes of the stage driver's bugle. He has grown rich by a total abandonment of farming, and holding his lands in bare fallow to be appropriated by the new civilization precipitated by the coming across them of the iron horse mail carrier, a dozen times a day, on the iron path.

COL. JOHN T. MILNER.

Reference has already been made to Colonel Milner as one of the two civil Engineers, who ran the line of one of the trunk railroads crossing at Birmingham, and who acted a conspicuous part in the prehistoric era of the city. Since then he has decreased nothing in zeal or devotion to his early convictions, and hopes of its future. He is a Georgian, and a graduate of the Georgia University, but came to Alabama years ago, and has worked manfully for the State. At present he is President of the Milner Coal & Railroad Company, which operates the New Castle Mines. He is also a warm friend of the Mobile and Western Railroad Company, which proposes to connect the famous coal fields of Walker county with deep water at Mobile. This is an enterprise of the greatest conceivable importance to Birmingham, and when completed will doubtless make of Mobile an iron manufacturing center and coal yard for the Gulf commerce. When a mere youth Colonel Milner rolled a wheelbarrow in a California gold mine.

HON. GOLDSMITH W. HEWITT.

The object of the brief biographical sketches which comprise this chapter is to illustrate the social character of Birming-

ham, to the extent, at least, which correct information, respecting its most influential citizens, may accomplish that purpose. The preponderance of Alabamians and Southerners will attract attention.

Mr. Hewitt, now in the prime of an eventful and highly useful career, is a native of Jefferson County. He is the senior member of the law firm of Hewitt, Walker & Porter, all of whom are natives of the same county.

In the first months of the war Mr. Hewitt enlisted as a private soldier in the 10th Alabama, in which he served until August, 1862, when he was promoted captain and transferred to the 28th Alabama Infantry, and was permanently disabled by a wound at the battle of Chickamauga. From 1870 to 1874 he represented his county in the General Assembly, first in the lower House and then in the Senate, from which latter service he resigned to accept political promotion.

Alabama had been shrouded in a deep despair. The government of her people had been displaced; a military domination had been mercilessly set up over them. The year which marked returning consciousness of political life in Alabama brought Mr. Hewitt into high and responsible office. He entered the 44th Congress as a member of the lower House, and at once began a consistent career of practical statesmanship. His representative labors were successful to an eminent degree; but it is not only in their success attained by energy and courage, but in their comprehensive and timely wisdom, that they have attracted attention. It required a bold ex-rebel a dozen years ago to proclaim from his suspected place in the Congress of the Union that the seat of justice of the Federal power in his State was a grand travesty on forms of law. The first act of representative Hewitt was the introduction of a bill, "to secure an impartial administration of justice in the Federal courts of Alabama." The task of the mover was to show that his bill proposed to remove a political machinery from those courts. The bill, or its equivalent, became law. The happy realization of its statesmanship is proven in the augmented reliance of the people on the law, and their better observance of its exactions.

The second act of Mr. Hewitt in Congress was in sympathy with another great reform, required by the development of the revolution. The substance of it is now esteemed by all who look

to the science of politics, as the foundation of practical government to be essential to our system. This second service was a bill to prohibit the despotic practice of assessment then in full tide of corrupting effects in all the departments, in the great custom houses, in the Internal Revenue service, and wherever salaried officials of the government could be conveniently approached. This bill is the germ of civil service reform demanded not alone by the exigency of the general welfare, but by the messages of all the Presidents since the war.

Representative Hewitt fully comprehended the situation at home. He clearly understood the significance of sympathetic laws of Congress with the era of industries opening in his district. He had small confidence in the generalizations of theories, but unbounded trust in the resources of the mountains and valleys of the counties which had sent him to Congress, and in the courage, capacity and purpose of his constituents to prosper in their marvelous stores of natural wealth. Therefore, he could find no opportunity for prolix speeches on irrelevant themes. He believed the constructive adaptability of the Constitution to realized emergencies of reform and progress, to be the only security to the life of that organic law, and that to conceal its spirit beneath the rubbish of an exhausted civilization would be equivalent to revolution.

Among the leading works of Mr. Hewitt, in his eight years of congressional service, were a bill prepared and introduced by him to pension surviving soldiers from both sections of the Union who had served in the Indian wars of Florida and Alabama, and in the Mexican war, which did not pass the Senate; a bill to repeal the law denying pensions to all but loyal persons; an argument before the House Judiciary Committee presenting the great evils of the then prevailing and now reformed Federal jury system; efforts to remonetize silver and to prevent the retirement of greenbacks, and to prohibit banks of issue; to suppress polygamy in Utah; to appropriate funds for the improvement of Alabama rivers and Mobile habor; to "secure lands for the landless and homes for the homeless" on the public domain. His efforts prevented the passing of coal lands of Alabama into the hands of monopolists who sought to buy them at government sale at nominal prices in a body, and close them to enterprise or settlement. He opposed the Reagan Inter-State Commerce Bill,

on the ground that to delay railroad building in Alabama by this menace against that species of property would be a far greater injury to all the people of the State than even such freight or passenger tariffs which railroad management could inflict on them in any probable case. Mr. Hewitt believes his own steady and vigorous opposition to the Senate amendments to the Mexican contingency for four days and nights, saved over $1,000,000,000 to the public treasury.

Mr. Hewitt's views on the tariff are conservative. He believed we should have a tariff for revenue with incidental protection; and a revenue from a tariff only. The revenue thus raised, in order to be equal to an economical administration of the government, would necessarily require protection to the full extent needed by our weeker industries. The adjustment of the schedule would be a business process involving only a thorough acquaintance with the subjects to be protected.

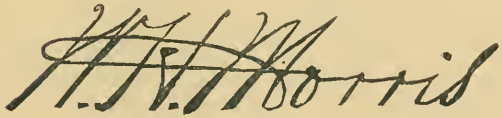
Mr. Hewitt volutarily retired from office in 1885. His record is one of eminent satisfaction to his constituency, and of honor to Alabama.

DR. M. H. JORDAN.

Dr. Jordan, though yet a young man, is among the early settlers of Birmingham, and stands in the front rank of his profession in Alabama. As a surgeon he is especially esteemed. He is a native of Jefferson County, and comes from one of the oldest and most respectable families in the State. For some time in the earlier city administrations he was Alderman. Independent in means, his devotion to his profession holds him firmly bound to its arduous duties. His efficiency in its practice is to be attributed not less to a zealous and enthusiastic study of its literature, than to the gentleness and urbanity of manner, which in the sick room and in society, preeminently distinguish him. He is, in every sense, conspiciously a representative man of Birmingham.

WILLIAM H. MORRIS,

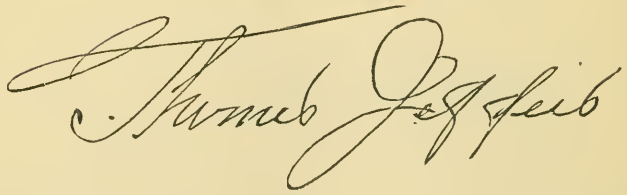
was the third mayor of Birmingham. Mr. Morris is a native of Chambers county, Ala. He came early to the city, and at once entered into its history as a man of public spirit, enterprise and confidence in the future. He served as Alderman in 1873-4. In 1874 he was elected mayor, over Dr. W. T. Parker, and was then in his twenty-eighth year only. He served two years, and was re-elected over Mr. James O'Connor. Before his term had



expired he resigned. The office of mayor of the city was a thankless one in Mr. Morris' terms. The cholera and the financial panic had literally broken up the city. He watched by its cradle faithfully, and has been repaid. He is now Secretary and Treasurer of the Avondale Land Company, and is a valuable citizen. Like all other business men interested in the growth of the city his faith brightens with contemporary events. He thinks as all other business men do that Mayor Lane's administration is of incalculable service to the city and a high honor to the mayor.

THOMAS JEFFERS.

Thomas Jeffers was born in Macon, Georgia, forty years before the date on which he became mayor of Birmingham. Being of an adventurous nature, when fifteen years old he determined to join the United States Navy. Stopping to see friends in Petersburgh, Virginia, on his line of travel, they dissuaded him from going on the sea. On his return route he stopped at



Wilmington, North Carolina, and apprenticed himself for six years in a machine shop. During this term of apprenticeship he enlisted for "three years or the war," in the 10th North Carolina Artillery, Confederate States Army. After seeing and participating in many engagements on the field, Mr. Jeffers was detached and ordered to ship aboard a Confederate blockade runner bound for Nassau. On this expedition he was captured at sea by the Federal naval forces, and having been sent to Fortress Monroe,

was imprisoned at that point for several months; released, at last, he made his way to Baltimore. The bad luck of his first voyage had in no degree thrown a damper over his Southern zeal. At Baltimore he shipped on a schooner bound for Nassau, taking passage as an ordinary seaman before the mast. Arriving, via this route, his original destination, Nassau, he re-shipped for Dixie, and entered the Port of Wilmington, passing through the Federal cordon of ships, without adventure. Leaving that port the second time, bound for Halifax, New Foundland, Mr. Jeffers was the second time captured and re-consigned to his old quarter at Fortress Monroe, where he remained ten days in durance vile. Halifax however was ahead of him yet. Therefore, by way of Boston to Halifax he went. There he joined a conspiracy to capture the Federal mail steamer. The conspiracy failed by the perfidy of one of the band of operators. Shipping from Halifax, via Nassau, he made several unsuccessful attempts to re-enter the Confederacy at Wilmington and Charleston. Happening at Havana in his cruise, he joined a boat plying between that point and Galveston, and remained in this hazardous service the balance of the war.

After a varied and interesting experience in the Spanish transport service and the cattle transportation business from Havana to Tampa, Florida, Mr. Jeffers returned to the railroads of the Southern States. In 1873, a bad year for the town, on account of the cholera and the financial panic, he settled in Birmingham as foreman of the Louisville and Nashville Railroad shops, just established here. While thus employed he took a lively interest in the city government, and was elected to a seat in the city council. While alderman he was Chairman of the Committee on Streets and of the Committee on Schools.

In 1878 Mr. Jeffers was announced as a candidate for the mayoralty of the young town. The friends of Col. James R. Powell, the "Duke of Birmingham," summoned him from his cotton plantations on the Yazoo to contest the election. Mr. Jeffers won the office, after a hard and close battle with his distinguished opponent.

In 1880 Mr. Jeffers again stood for the mayoralty against three opposing competitors, and won. In 1882 he offered for the third time, and was defeated by the present incumbent, Mayor

Lane, after a most vigorous and exciting canvass by a small majority.

Mr. Jeffers is a citizen of the town largely identified with its interests. He is the junior of the firm of Thomas & Jeffers, lumbermen and building contractors, and is the Superintendent of the Birmingham Gas Works Company. He seems to find in the progress of daily events around him here full scope for the excitements which his nature craves, and full call for his untiring energies.

A. O. LANE.

Alexander Oscar Lane has been twice elected mayor of Birmingham, and now occupies that office. He is a native of Alabama, a young man of liberal education, indomitable cour-

age, much energy, and posesses a suggestive mind directed by sound judgment. He came here in the early years of the city, and soon learned to look forward with unbounded confidence in

its growth. From time to time he invested his small earnings in real estate. He is now a Director in one of the chief banks, and the owner of very valuable property. His residence is a model of a happy home, neat, roomy and orderly. No man in Alabama is more sympathetic with the advanced thought of the times, touching practical politics and social science, than Mr. Lane. He is distinguished by the complete confidence of his fellow townsmen.

As presiding officer of the daily sessions of the Mayor's Court, he is quick, sound and firm in his rulings. He has been a journalist in this town, of force and influence. He has been Register in the Chancery Court of Jefferson County, and served with admirable tact and ability. He was made Chairman of the Congressional Nominating Convention of the Democratic party of this District, at its last meeting without notice to him or solicitation from him.

His city administration is active, conservative, energetic and prudent. An immense deal of improvement of the most notable and valuable kind has been done on the streets with dispatch and economy, denoting wise supervision by the chief executive officer.

Mr. Lane's address, delivered before the River and Harbor Improvement Convention, assembled at Tuscaloosa, November, 1885, displayed the highest appreciation of the value of the subject to Alabama, and was received by that intelligent body with distinguished approbation.

Mr. Lane is the senior member of a legal firm doing a large and growing business, and is an active member of the State Executive Committee of the Democratic party. His law firm occupies three capacious and elegant rooms in one of the largest of the new buildings.

BAYLESS E. GRACE.

The old time planters and slave holders of Jones' Valley were a peculiar class of men. Land locked amidst the mountains, they developed a character as distinct as islanders. They were as amiable as a June morning, and as temperate as the soft breezes which gave them ruddy cheeks and clear heads. They did not labor with their own hands, and the toil of their slaves appeared to be a kind of family arrangement preliminary to the

final enjoyment of some big holiday set for the future. Nobody, white or black, was ever in a hurry, and all maintained the undisputed right of private judgment, with small authority to enforce a decree, resting anywhere. The planter ordinarily walked out at dawn of day among his poultry yards, and stock pens, in his shirt sleeves, to enjoy his pipe, to partake of the serenity of well fed flocks and herds, and chat with his lazy negro plowmen who filed by at a later hour.

The valley planter differed from the mountaineer in the breadth of his education, which was liberal, in the profuse good cheer of his board, in his general intelligence and ability to rear and support his family. He differed from the great planters of the black belt in the simpler aspirations of life. He placed no great stress upon the fit of his clothes, the regulation of his etiquette, or the spread of his fortune. He delighted in hospitality with no thought of its exacting ceremonies. His moral nature was pure, brave and unselfish; he loved his country and feared his God. Standing on the social "divide" between the aristocracy of the black belt, and the yeomanry of the mountains, he filled that happy mean in character, rarely found, which is sure to make a strong community. But the Jones' Valley cotton planting class is extinct, for better or worse. It has passed onward with the revolution, while the impoverished copatriots of the black belt have taken the counter march in the role of fortune.

Mr. Grace is one of the most illustrative characters of his class. Venerable in memories of the past, he is yet active in the new era. The victim of a revolution, he is one of the fortunate beneficiaries of the restored prosperity of Alabama in the new channels.

When Maj. Peters first appeared in this part of Jones' Valley, locating mineral lands, poor and on foot, he came as the unheralded prophet of the day. Mr. Grace took his words to heart, and took the neglected pioneer by the hand, and remained steadfast in support of his efforts.

WILLIAM A. GOULD.

Two most important discoveries in the history of mining in Alabama, belong to this honest and sturdy Scot. With pick on shoulder he went into the deep forests and first opened to view the great Pratt seam of coal. From the product of the seam he

first made coke. These two events prove to have been the turning points in the restoration of the prosperity of Alabama.

Mr. Gould had mined coal near Tuscaloosa in 1854. The next year he opened the first mine of the Montevallo Coal Company, now the Aldrich Company. Later he opened mines at Broken Arrow and Trout Creek, St. Clair County. He entered the coal business largely, boating cargoes to Mobile and other cities on the water routes. Mr. Gould and Mr. Beggs, now a large iron manufacturer of Birmingham, bought 160 acres of land around the former's discovery of the Pratt seam. Untoward fortune compelled Mr. Gould to sell his interest for $1,800. At, or near, the point of original discovery is now located Drift No. 1, of the Pratt Coal & Iron Company.

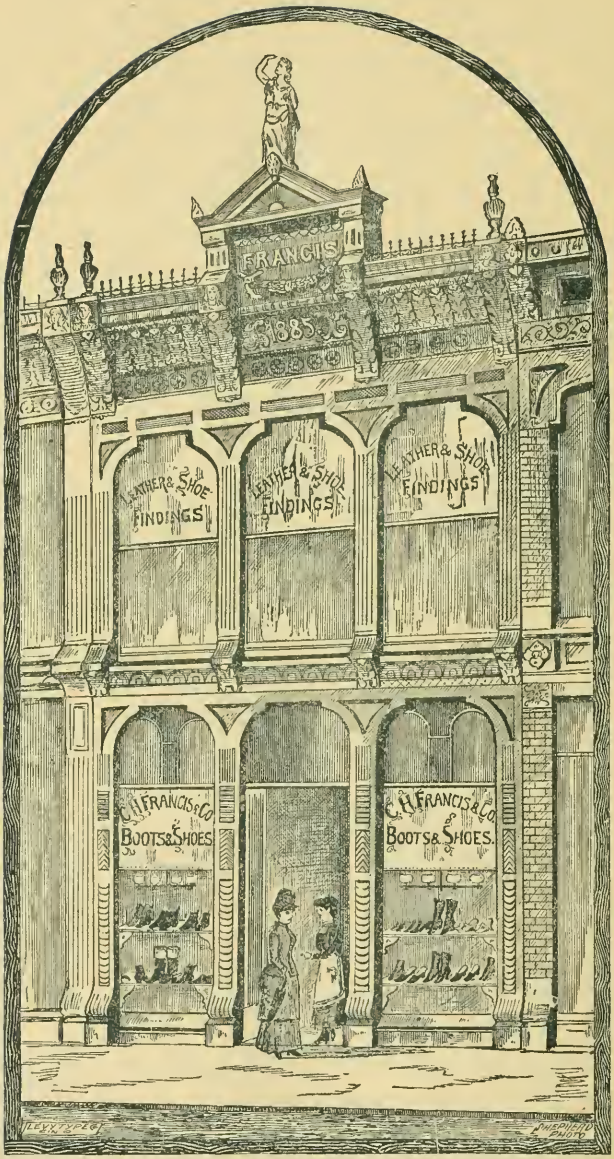
Mr. Gould made 100 tons of coke from the Pratt seam coal, and the Eureka Furnace Company tested it, and, finding it good, began the substitution of coke for charcoal. All the blast furnaces of Alabama then used charcoal.

Mr. Gould has important work now in contemplation in the mining interests of the State, and justly ranks among the most useful men in its borders.

HON. M. T. PORTER.

The position of Judge of Probate of Jefferson county is a most responsible office, as well as a lucrative one. To be filled acceptably the incumbent must be at his post continually, with a faculty for system and order well developed, a clear judgment and thorough knowledge of the people whom he serves, and must be in full sympathy with their wants as they appear before his court. Upon the retirement from the office of Hon. John C. Morrow, a native of Jefferson County, a gallant soldier and a man of marked ability and capacity for the place, Governor O'Neal made one of those happy appointments for which his two administrations have been noted, by the selection of the subject of this notice as Judge Morrow's successor.

Judge Porter is the son of Dr. Porter, a physician of high standing in Shelby County in his lifetime. At the little village of Montevallo, under the terminus of the mountain range, he was born 61 years ago. When only a few months old his widowed mother brought him to live on a farm, a part of which is now one of the most beautiful southern surburbs of Birmingham.



C. H. Francis & Co., Shoe Store.

In course of time the son was sent to the East Tennessee University, where in 1848 he was graduated.

Mr. Porter, at the incipiency of war, raised a company called the Jefferson Rifles, and as its Captain, was mustered into the Confederate Army and assigned to the famous 20th Alabama Infantry, commanded by Col. I. G. Garrott, of Marion, until his promotion, and afterward by Col. E. W. Pettus until his promotion. Captain Porter's Company was the Color Company of his Regiment. Amidst such surroundings Captain Porter rose successively to the rank of Major, and Lieutenant Colonel.

While a paroled prisoner of the Confederate garrison of Vicksburg, which surrendered to Gen. Grant, July 4th, 1863, Col. Porter was elected State Senator from the District composed of the county of his birth and that of his adoption.

While living in Birmingham as a practicing lawyer, a petition, numerously signed by his fellow citizens, arrested the attention of the Governor and resulted in his appointment to his present office.

THE BANK PRESIDENTS.

CHRISTIAN F. ENSLEN

Is the founder of the first Savings Bank opened in Birmingham, The Jefferson County Savings Bank, and is its President. He is a native of Stutgart, Germany, and is a self-made man, in the familiar phrase used to designate one who, in the humbler labors of life, has accumulated resources which enable him now to enlarge his sphere of capacity. He is yet a working man, so far as close attention to the duty of the hour may indicate one. By diligence, economy and successful investments he has come in possession of a comfortable fortune. His Bank is constantly growing in business, which is proof of the confidence of the community in which he has prospered and constantly resided. His son, Mr. Eugene F. Enslen, is the efficient cashier.

The building is a four story brick, owned by the Bank President. Its mansard roof and trimmings make it one of the most striking, as it is one of the most substantial, edifices of the city. It was completed in December, 1885.

JOSEPH F. JOHNSTON

Is the President of the second largest Bank, estimated as to capital stock and business. This is called the Alabama State Bank. Capt. Johnston is a native of North Carolina, but came to Selma, Alabama, as a lawyer, some 20 years ago. At the age of 17 he abandoned college to join the Confederate army. He made a reputation as a cautious and skillful advocate, when at the bar. His executive ability persuaded the Democrats of the State to make him Chairman of their Central and Governing Committee, at a critical period of the party career. He is a logical and polished writer, and stands in enviable influence at home and abroad, as a banker of advanced views. In the industrial and social life of Birmingham, he is a forceful and esteemed citizen.

The Alabama State Bank is a three story commodious brick, the interior finished with the native yellow pine, the grain being displayed under oil, without paint. Mr. J. W. Read is the cashier.

WILLIAM BERNEY,

Is the founder and President of the latest of the Banks, the "Berney National." He is a son of the late Dr. Berney of Montgomery, a physician of eminence, and a gentleman of high influence in that city. There the Bank President was born. Mr. Berney came to Birmingham as an agent of the North & South Railroad, when a young man. His later experiences have carried him successfully through all the grades of the Banker's training. He is one of that estimable class of business men never so very busy as not to have time to lend a patient hearing to all who approach them with honest intent. These are the strong and faithful, whether masters of much or little. The local popularity of the President, in this case, is of material benefit to the Bank.

The Berney National is supported by some of the most enterprising of the younger merchants and capitalists of the city. The building is the model of good taste in appropriate architecture, being built of pressed brick, with grey stone facings, and thoroughly lighted and ventilated. It is one of the most striking architectural ornaments to the city.

Mr. J. B. Cobbs, is the cashier.

W. J. CAMERON,

Is President of the First National Bank of Birmingham. This

gentleman is the youngest, in years, of the Bank Presidents, though governing with steady hand, the oldest and strongest of these powerful aids to Birmingham prosperity. He is a native of Montgomery, Alabama.

Mr. Cameron is the inheritor of business qualities of the highest kind. He is a self poised man, prompt, punctiliously polite, yet firm in his administration. He has risen to his present enviable rank on his merits, and in regular succession of promotions, from clerk onward. Attention to social and civic duties has not been neglected. He was Orderly Sergeant in that famous corps, the Montgomery Grays, and later was Major of the 2d Regiment of State Troops.

As are all the Bank Presidents, Mr. Cameron is interested in the growth of the town, otherwise than as a holder of Bank Stock. He is president of the Birmingham Iron Bridge Manufacturing Company.

The First National Bank was called "Linn's folly," because built by Mr. Charles Linn, before other important improvements had been made in the city. His son, Mr. E. W. Linn is Cashier, and Mr. T. O. Smith, Assistant Cashier.

CHAPTER XV.

COST OF PIG IRON AND ANALYSIS OF ORE AND COKE, NATURAL GAS, ETC., ETC.

When the distinguished Pennsylvania statesman, Hon. Samuel J. Randall, visited Birmingham the 1st of January, 1885, his explorations led him a few miles out into the adjacent mineral lands. Standing on a mountain side, loaded with richest deposit of red hematite iron ore he had ever known, he espied across the valley, only six miles off, the great Pratt Coal and Iron Company's coal mines and coke ovens. In the valley itself, uniting the ore and the coal, inexhaustible supplies of limestone lay upon the surface. The juxtaposition of such resources exist nowhere out of Alabama. This source of wealth inestimable is destined at an early day to find a market through water ways, making connection with the sea at Mobile and with the Mississippi river, and the great empire, drained by it tributaries. In view of the widening demand of the world for cheap iron and cheap coal, how firm the foundation for confidence in the future of Birmingham!

The answer therefore to the enquiry touching the cost of making pig iron in Birmingham, must be sought in practical experience. Results will vary with the degree of energy, skill and economy which prevails at each furnace. The proximity of the basic materials to the furnace and to each other, as stated above and the proportion of metalic iron found in the ore, and the coke producing value of the coal, and the price of labor here, and the cost of transportation must each play its important part in determining the problem. Certain it is that in a recent period of protracted depression of the iron trade, under the effects of which

there was general suspension and wide spread suffering in Pennsylvania in the furnaces, the furnaces of Alabama did not suspend; there were no strikes, and the town of Birmingham steadily grew in population and area and wealth during the entire period.

The following is the analysis of our red hematite ores made by a distinguished analytical and consulting chemist, known in all parts of the United States for proficiency in his profession. We preface it by saying the Birmingham iron is strictly neutral, not a trace of sulphur, but a little too high in phosphorus for Bessemer steel. The average of the red hematite is fifty per cent. and upward metallic iron. While phosphorus is too high for Bessemer it is not sufficiently high to render the iron "cold short." Therefore it is strictly neutral. It may be well taken that there has been a very great increase of daily out put of pig iron from Birmingham furnaces in 1886 as compared with previous years. Experience has now proven that they can make more iron with less ore and less coke and flux than has been the case in the past with them.

ANALYSIS:

Metallic Iron	58.111
Phosphorus	.069

Ten combined samples show an average of—

Metallic Iron	55.59
Phosphorus	.79

The following figures are recommended as having received the highest endorsement which could be desired to prove their approximate correctness:

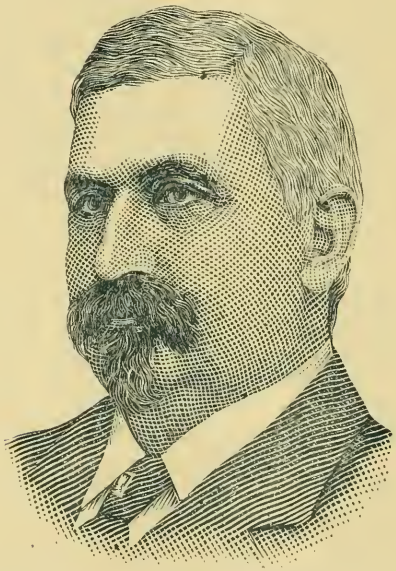
2¼ tons of ore at $1.15	$2.58¾
1 ton limestone	70
1 7.10 tons coke at $2.30	3.91
Labor and salaries	2.25
Incidental and depreciation of plant	1.00
Cost of a ton of pig iron	$10.44¾

Mr. Reese, the inventor of the Basic process of converting phosphoretic ores into steel, has visited Birmingham, and has sold to iron manufacturers here, the right to use his invention. Preparations are at this time being made to test the value of that process on Alabama ores. The inventor believes the phosphorus in the ore will be eliminated and then absorbed by the lime used

to attain that result, and in consequence a phosphorate of great value as a fertilizer will be produced. With this estimate as a basis variations may be expected, but only from the presence of circumstances which do not attack the estimate for all that is claimed for it.

The Mining Journal of Birmingham says:

"The Connellsville coal is regarded as the standard coal of American market, but the Pratt coal surpasses it in fixed carbon. The samples which were used in the analysis we give below, were taken from the face of the seam by a vertical cut from top to bottom, and the test made by Professor J. L. Campbell, of the Washington-Lee University, Lexington, Va.



Enoch Ensley, President P. C. & I. Co.

ANALYSIS:

Moisture	1 06
Fixed Carbon	64 30
Volatile Matter	32 08
Est. Sulphur	0 47

The coke made from this coal is of a very superior quality, and is in large demand, not only in this district but many other parts of the United States; shipments have been made as far west as Arizona. The erection of a Shepherd's improved Welsh washer, for washing the coal previous to coking, will be a vast improvement and greatly enhance the value of the coke".

The coal of only four states of the union is considered excellent for coking, and of these Alabama is one, the others being Tennessee, West Virginia and Pennsylvania.

IRON AND COAL SIDE BY SIDE.

We have seen that there is a great deal of iron made in St. Louis from coke transported from Pittsburgh, hundreds of miles over railroads often obstructed by freezes in winter. Ohio takes a great deal of iron ore from Missouri.

In Alabama the coal for coking and ore for manufacturing, and the lime for fluxing lie side by side. What an immense difference in the cost of transportation of base materials to the furnace men. Here in Birmingham, a stove manufacturer picks up free and makes in his shop his own lime at a saving of many dollars every day.

The following letter is from an accomplished mining engineer of national reputation, who is in the professional employment of the great Pratt coal mines:

OFFICE OF PRATT COAL AND IRON COMPANY,
Pratt Mines, Ala., March 16, 1886.

To the Editor:

We have discovered natural gas near Pratt Mines, and by boring, say 700 to 1,000 feet any quantity can be obtained to run all the industries in the state of Alabama. I also believe that "Natural Gas" can be found under all the Carboniferous and Sub-Carboniferous formations of Alabama. We have had experts here from the Pittsburgh gas country, and they all agree that our formations here resemble Pittsburgh, (Pa.)

I am, yours very truly,
L. W. JOHNS,
Mining Engineer.

CHAPTER XVI.

Industries, Real Estate, Taxes, City Government, Etc., Etc.

THE PRATT COAL AND IRON COMPANY.

This great enterprise, as we have seen, was the initiatory step in the industrial growth of Birmingham. The Company is now engaged (May, 1886,) in erecting four large Blast Furnaces, capacity, 150 tons each, per diem. Up to this period it has confined itself to coal mining and coke manufacture. The general character of the mines, and the mining operations we will briefly describe. The coke ovens now in use, and being built, number 710. They expect soon to build 1000 more, making 1710 in all. The capital stock of the Pratt Coal and Iron Company, is $1,500,000, without the new enterprise in iron. It owns some 70,000 acres of coal and ore lands, of great value. The daily output is about 2,500 tons of coal and is increasing. The pay roll is $40,000 per month. The office of the Company is six miles northwest of Birmingham, and the mines are connected with the city by the Company's own broad gague railroad. It owns 30 miles of railroad, connecting its several mines with each other and with the city.

The ventilation of the mines is secured on the most scientific principles, and no accident, occuring from want of ventilation, has been known.

This is the largest coal property owned by a single corporation. Enoch Ensley, its President, is a native of Tennessee. L. W. Johns, the Chief Mining Engineer, is a Welshman.

The following description is so concise and clear it is adopted without abbreviation, though originally appearing in the Birmingham Age, "Exposition issue:"

The present openings on the Pratt property, are known as Slope No. 1, the Helen shaft, Slope No. 2, the Drift and Laura Slope. The united output of these mines per day, is 2,500 tons, which, with their present demand, could be increased to at least 3,000 tons per day, were the railroad companies in a posi- to furnish cars for the shipment of the orders on hand.

SLOPE NO. 1

Has been sunk 2,000 feet. There are 14 cross entries, averaging 1,320 feet in length, and containing innumerable rooms. The output from this mine is 600 tons per day. In this slope there are about 15 miles of iron track laid in the slope, entries and rooms. Here 200 men, 21 mules and 270 tram cars are continually working.

The machinery at this slope, comprises one double hoisting engine, drums, six boilers and one endless rope which is 2,000 feet in length, and the only one of the kind, in use in the country. It is the invention of L. W. Johns, the mining engineer. It saves the labor of 50 mules, and can be extended to any required distance, and is capable of hauling any amount of coal. It has been in use four years, and has neither broken nor got out of gear in any way, shape or manner. In the mine are two Knowles' steam pumps, with a capacity of 500,000 gallons a day.

THE HELEN SHAFT

Is one mile northwest of Slope No. 1, and is sunk to a depth of 204 feet from the surface. It contains a Slope 3,000 feet long, which connects with Slope No. 1. It has eight cross entries above the shaft, and a Slope of 1,000 feet, with four cross entries below it. The rooms in the cross entries at this shaft, are opened 100 feet wide, with 20 feet pillars between, which are robbed as soon as the room is worked out. The output from the shaft is 700 tons per day, capable of being increased to 1,200 tons. It contains eighteen miles of iron track in the slope, entries and rooms, and is worked exclusively by convict labor and the

HARRISON MINING MACHINE.

This Machine is propelled by one man, and consists of a pick fastened on a piston. With each stroke of the rod the pick delves in the coal at the bottom of the seam, to a distance of four feet four inches. Mr. Johns said that the task of the man that works the machine, is 90 lineal feet per day, which work he can accomplish in six hours. He further stated that some of his best machine men have cut 164 feet, for which Mr. Whitcombe, the proprietor of the machine, paid his offered reward of $50 to the first man that could cut 150 feet in one day.

There is an immense difference between the old way of working with a pick, and the improved mining machine. With the latter a man can undermine 400 square feet per day, and with a pick only from 60 to 70 feet. Another advantage is, that owing to the great distance reached with the machine, a far better grade of coal is obtainable than with the ordinary pick.

Eight miles of 2½ and 8 inch wrought iron pipes are used for conveying compressed air to these machines, and 22 mules and 300 mining cars for transporting the coal to the edge. The machinery at the shaft comprises one double hoisting engine and drums of superior make and finish, capable of hoisting 1,200 tons per day, one duplex Allison compressor, capable of running 24 of the Harrison Mining Machines, and 12 two-flue boilers in three batteries. The cages which are used for hoisting the men and coal, are of the most improved make and latest patterns, with safety catches, similar to those used on the Comstock lode, in Nevada.

Three Knowles pumps are in use in the remote parts of the mine and two at the bottom of the shaft. The united capacity of the latter is one million gallons in twenty-four hours. The chutes and head gear at the top are constructed in the most substantial and workmanlike manner of any in the state. At the bottom of the shaft a great deal of skill and ingenuity has been displayed in the manner of loading and unloading the cage. One thousand three hundred cars can be handled per day by three men with ease.

L. W. Johns, Mining Engineer.

SLOPE NO. 2.

is one and one-half miles northeast of No. 1. It was sunk on the cropping of the Pratt seam, as was also No. 1. This slope is down 1,700 feet and has eight workable cross entries. The rooms are 80 feet wide by 300 feet long, separated by pillars of 20 feet. This slope is worked exclusively by convict labor. It contains 14 miles of iron track, 300 tram cars, 20 mules and has an output of 500 tons per day. The machinery consists of one double hoisting engine and drums six twelve-flue boilers, one small compressor and three large Knowles' pumps.

THE DRIFTS.

Mining is done here on a very extensive scale. They are located in a gulch three and one-half miles northeast of slope No. 1. On either side of this ravine the croppings of the coal are clearly discernible. The headings are driven on water level into the mountains, making each self-draining. The openings are five drifts and two slopes, one on the dip northwest and the other on the dip southeast. The slope on the dip has been driven three-fourths of a mile through a mountain. To accomplish this gangs of men were working from both ends at one time, and the two headings meet without any variations of the centres. In this slope twenty-four entries can be opened which will give it a capacity of 1,000 tons a day. The slope on the rise has also been driven to day light, where twelve gang-ways can be opened, giving an output of 600 tons a day.

Drifts Nos. 1, 2, 3, 4 and 5 have a united capacity of 500 tons a day. In all the above openings are 20 miles of track, employing 22 mules and 500 tram cars. These mines, owing to their natural location, are perfectly dry and economically operated without the aid of machinery.

THE LAURA SLOPE.

This new opening is one and one-half miles southeast of slope No. 1. It has been sunk 350 feet from the surface, with the seam gradually dipping from the top of the ground to its present terminus. The seam at this mine is four feet nine and one-half inches by actual measurement, perfectly uniform in thickness and of the very finest quality. The timbering for supporting the roof is excellent. It is done by ten-inch square pine posts, running perfectly straight without any variations whatever. There will be a double track and one man-way in the slope. When complete it will be the best piece of engineering work in the Pratt mines, forming one continuous underground tunnel, extending thousands of feet with cross entries right and left, running from it, which in their turn will have rooms on either side. To a mining man this slope is an interesting sight and one that would rejoice the heart of the fortunate owner of a similar property. If there are still in the world any skeptics or prejudiced persons who deny the fact that Alabama has the finest coal fields in the world, the writter would like to show them the magnificent seam in the Laura slope at the Pratt mines.

This mine will be worked on scientific principles; the coal will be mined entirely by machinery of the most approved style. The plans of the engines, drums, compressors, boilers and chute show them to be of the most elaborate description. The engines and drums are now being manufactured at the works of the Linn Iron Company, whose excellent machinery is so widely known.

THE VENTILATION

Of all these mines is most perfect. It is done by means of steam jets, fans and furnaces which give a bountiful supply of pure, fresh air in the slopes, entries and rooms.

ENOCH SLOPE.

This is a new enterprise of the company, situated one and one-half miles from the Laura, and named in honor of the President, Enoch Ensley. Every modern improvement is applied to it, such as air compressors, mining machines, coal drills and endless ropes. It is expected that 1,000 tons daily will be the output.

NAPOLEON SHAFT.

This is projected work to commence August 1st. It will be 300 feet deep.

It is supposed the Base of the Pratt Vein will be reached at that distance. Hoisting engines and all the machinery for this shaft will be built in Birmingham, at the Linn Works. Engineer Johns says coal will be reached early next year, and the capacity of the shaft will be 1,500 tons daily.

In addition to the grand coal mines and blast furnaces of this company described above, they expect to build

STEEL AND PIPE WORKS,

Which will employ 1,000 men.

W. A. Gould.

The following is a list of the more important coal and iron industries of the mineral region of Alabama.

BLAST FURNACES.	CAPITAL STOCK.	HANDS EMPLOYED.
Woodward,	$1,000,000	600
Woodstock,	600,000	700
Tesenmseh,	200,000	350
Shelby,	600,000	400
Edwards, (now preparing to go into blast.)		
Brierfield, " " "		
Eureka,	$830,000	300
Mary Pratt,	300,000	——
Alice,	750,000	——
Coosa,	125,000	——

Sloss,..... 750,000.....——
Williamson,..... 120,000, now being built.

Agg'gate active fur'ce capital, $5,275,000.

The majority of these Furnace Companies contemplate enlarging their plant, and at least ten new ones or restored ones are assured of early completion.

NEW FURNACES.

The new furnaces now in course of construction or soon to begin, are :

Pratt Coal and Iron Co.,.....4
Thomas Co.,.....2
Sheffield,.....4

The DeBardeleben Co. expect to build several.

The Thomas Co. are among the largest furnace men of Pennsylvania. They own some $400,000 mineral lands near Birmingham, and will probably develop them fully from the small beginning above indicated. They bought their land nearly twenty years ago, and are therefore, among the pioneers of the new era in Jefferson County.

The other more important iron and coal industries are :

Pratt Coal and Iron Co.,.....	$1,500,000
Henry-Ellen Coal Mines,.....	450,000
Coalburg Coal and Coke Co.....	500,000
Birmingham Rolling Mills,.....	300,000
Anniston Car Wheel and Axle Works,.....	100,000
Milner Coal and Railroad Co.,.....	200,000
Pierce Warrior Mining Co.,.....	120,000
Helena Coal Co.,.....	100,000
Watts Coal and Coke Co.,.....	100,000
Morris Mining Co.,.....	100,000
Va. and Ala. Mining and Manufacturing Co.,.....	200,000
Cahaba Coal and Mining Co.,.....	1,000,000
Brierfield Coal and Iron Co.,.....	750,000
Birmingham Iron Works, ...	50,000
Bibb Branch Coal and Coke Co.,.....	50,000
Mabel Mining Co.,.....	50,000
Jefferson Foundry,.....	30,000
Linn Iron Co.,.....	30,000
Beggs' Stove Factory,.....	17,000

Boland's Foundry,...	10,000
Iron Bridge Manufacturing Co.,...	25,000
Aikin & Lighton's Foundries,...	25,000
Birmingham Chain Works,...	10,000
Total,...	$5,717,000

These enterprises are all prosperous and hopeful, and in addition to the $5,275,000 active capital engaged in the manufacture of pig iron, they represent $5,717,000, devoted to handling iron and coal in large quantities. The average age of these industries hardly exceeds four years.

The following table shows the growth of the pig iron industry in Alabama in ten years. The State will probably stand fourth in pig iron producing at the end of this year, as she did fifth at the opening of it:

1876,...	24,732	tons.
1877,...	41,241	"
1878,...	41,482	"
1879,...	49,841	"
1880,...	77,180	"
1881,...	98,081	"
1882,...	112,765	"
1883...	172,465	"
1884,...	189,644	"
1885,...	227,438	"

The coal output of the Alabama mines in the same period of ten years, is as follows:

1876,...	100,000	tons.
1877,...	175,000	"
1878,...	200,000	"
1879,...	200,000	"
1880, ...	340,000	"
1881,...	375,000	"
1882,...	800,000	"
1883,...	1,400,000	"
1884, ...	1,800,000	"
1885,...	2,225,000	"

In 1880 the coke product was 60,781 tons, from 316 ovens. In 1885 there were 1,200 ovens with a product of 304,509 tons,

making Alabama rank next after Pennsylvania in coke production among all the states.

The banking capital of Birmingham was in

1880,	$ 50,000
1884,	150,000
1886,	600,000

The assessed value of Jefferson County alone, increased $2,000,000 for the year 1885. This increase was due to the introduction of new mining and iron manufacturing industries.

The city tax of Birmingham for 1886 aggregate in amounts assessed as follows:

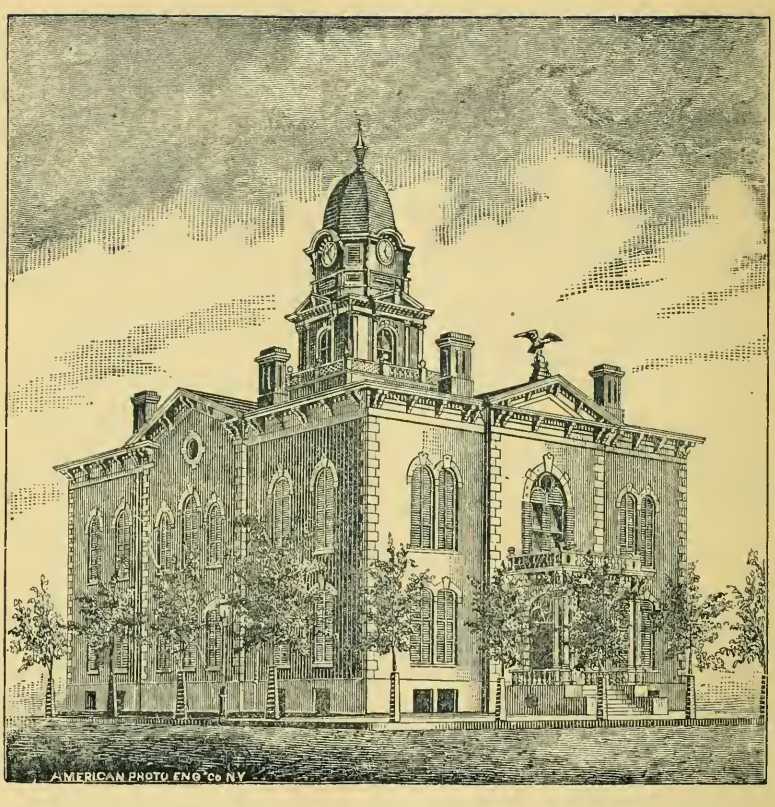
Real and personal,	$19,733.24
Licenses for 1886, say	23,000.00
Merchants tax, say	3,000.00
Street tax, say	3,200.00
Poll tax, say	1,800.00
State appropriation for schools,	1,311.84
Tuition in public schools,	3,500.00
Total amount,	$55,545.08

The average *per capita* city tax, is about $2.50. The average under this head in New York is about $27.00. In New Orleans about $15.00.

REAL ESTATE.

The land included in the corporate lines of Birmingham, cost the Elyton Land Company, estimating the streets as well as the lots, about $25,000, some seventeen years ago. Excluding the streets, the area is now worth, tried by the daily transactions in unimproved lots, not less than $5,000,000 cash. This simple statement is the most eloquent justification of the hopes of Birmingham which can be published. It is legitimate effect from eternal cause. The mind familiar with the early history of great industrial development will seize at once upon the salient fact that, the first steps, in exposing to commerce the wealth of the mountains surrounding Birmingham, have been the only doubtful steps in its progress toward a grand and inestimable realization.

Real estate in the city is really not high, but very reasonable in price, in comparison with other Southern cities. But the healthly appreciation in prices, the steady market, the perfect confidence of the resident population in that kind of investment,



Jefferson County Court House.

make a marked character for real estate in this city which is literally the foundation of its prosperity. The real estate agents are uniformly thrifty men, and some whom came early with small means, are now among the large investors.

It would not be possible to furnish an exact tariff of rates indicative of the present condition of the real estate market in the city. The railroad reservation divides it into two approximately even parts from East to West. The location of general wholesale commerce and of the furnaces and iron industries are found to be along the blocks convenient to the railroad lines. $5,000 to $6,000 for a lot unimproved, $250 foot front by 100 deep, is perhaps a fair statement of the transfers made in the commercial district. Eight or ten squares back a block 200 feet square sells for $10,000 to $12,500 unimproved. Private residences of five to eight rooms, rent from $20 to $45 per month according to location and style of appearance and conveniences. Cottages of two to four rooms rent from $10 to $12.50 per month. Business houses with shops on the ground floor and offices, bed rooms, hotel, etc. above, cost from $10,000 to $25,000 to build, and rent $300 to $550 per month.

The second course of streets, out from the railroad reservation, is occupied by lawyers offices, doctors offices, dry goods shops, real estate agents, livery stables, laundries, the banks, the court house. The third course of streets hold the private residences, the city park, the schools and churches, the exposition building and grounds, the market house, etc.

The city papers seldom or never contain advertisements of real estate for sale to pay taxes. Money in the city is mostly used to build houses, street railways, manufactories, and is placed in active business in various ways, but may be obtained on realty, so steadily appreciating too readily to allow taxes on it to default.

The curbing of the streets and paving of the side-walks is progressing rapidly. The water supply is kept up well to the demand. The sewerage is constantly being increased. The taxes are very light. The public health is excellent. The public school system is good and alive to all modern improvements. Law and order are maintained. These are all influences which enter the real estate market to preserve it on a sound and conservative footing.

The brick used in Birmingham for ordinary house building are manufactured here, and sell for $7 per 1,000. There is a fire-brick manufactory on the suburbs of the city. There is room of course, for a first-class iron mantle-piece and ornamental iron work manufactory. The yellow pine region south of this on the railroads, is too well known to require description here. A vast and prolific yield of pine, hickory, oak, poplar, walnut, chestnut and other valuable timber will be open by the railroad connections to be at an early day established through the Northwestern counties, where those timbers abound.

It will be remembered that when perhaps in 1859-60, the Washington Monument Association called on each State for a contribution of a block of native marble to be placed in the pile, and to be accepted as commemorative of the state, the Governor of Alabama responded to the suggestion by sending one quarried from Talladega County. It was promptly set aside by the managers of the monument as an attempted fraud. The stone was pronounced a fine Italian importation. The Order of Free Masons of Talladega took up the matter, and by formal and certified statements, convinced the authorities to whom it had been assigned of the truth of the Governor's report.

The letter following is taken from the correspondence of the Mobile Daily Register, its author is well known in Alabama:

THE CAHABA MARBLE QUARRIES,
CENTERVILLE, BIBB COUNTY, February 20, 1886.

Having just returned from a tour of inspection of the marble quarries, near Pratt's Ferry, I feel somewhat enthusiastic over the immense possibilities of the marble industry of this county. Before the war, before the railroads broke down old industries and built up new ones, these quarries were worked. Vance & Braam sawed large quantities by water power on Litesey's Creek, which runs through the heart of these marble fields. Their output was largely used throughout this section for tombstones, and to a limited extent for building purposes. The mansion of the President of the University of Alabama, at Tuskaloosa, contains some of this marble. So does the Courthouse at Marion, and the King House of the same place. There is also a grand plantation residence near Marion, the Curry homestead, at which I was once most hospitally entertained, which is, if I remember correctly, largely built of this material. You must take into consideration that in those days it had to be hauled there long distances by wagon, over country roads. There was also another individual or firm engaged in the business on Shultz' Creek, who hauled this crude material some miles to his works, and made it profitable. His name was told to me, but I can not now call it to mind. It is strange that the idea never occurred to men

of rafting or barging this marble to Mobile. They may, indeed, have done so, but I find no one here who can enlighten me as to the facts. It would be a most lucrative business. Shallow barges could be sent down on the rises in the river almost every month in the year, and if the facts are fairly represented in Congress with regard to the Cahaba River, and the varied and dormant resources of the country through which it flows, such an appropriation should be made for its improvement as will enable such barges to gain access to these quarries at all times; for solid walls of this material, white as snowdrifts, rise grandly from the water's edge on both sides of the river from 80 to 100 feet. It can be removed from the bluffs and placed on barges directly beneath.

In quality this marble is unexcelled, and its variety of color is most remarkable. It is pure white in one ledge, while almost touching it is another ledge black as jet, and near by may be found large quantities of pale pink, reminding one forcibly of the inimitable delicate hue of peach blooms; then will be found a ledge locally called "calico," showing almost every hue of the rainbow, weaving in and out and through and through in perplexing and tangled skein. I do not think there can be a finer field anywhere for a small company to invest a few thousands and build up princely fortunes. Should any individual or company wish to investigate the subject, I shall take pleasure, *pro bono publico*, in furnishing all necessary data.

I feel sure that this subject is worthy of the most searching investigation, and that these different marbles will compare favorably with others under the most crucial tests. A short line of railroad runs within about five miles of these quarries. The finest water-power is at hand, running over the ledges, to show the stone. The river runs through and over it.

No one seems to take much interest in the improvement of the Cahaba, yet it is of more importance to Mobile than the Warrior; the latter can bring you only coal and iron, while the Cahaba can supply you with enough of that article of the best quality to supply you a thousand years, and can also furnish unlimited quantities of iron, and marble enough, at a nominal cost, to build a city like London. Though we may not see it, the time will come when Mobile, the Venice of the New World, will have miles and miles of palaces built ot these beautiful stones. Let us accelerate the coming of that time. Who that reads this will raise his voice or wield his pen to influence a Congressman to investigate the merits of an appropriation for the improvement of the Cahaba River?

LUTHER M. CLEMENTS.

The Talladega marble fields are equally remarkable with those of Bibb County. They have been worked irregularly, and on a limited scale for fifty years. Near Syllacauga in 1836-8, a Scotchman opened a quarry and carried on an active trade in the manufactory of tomb stones. His material was proven to be equal to the Italian or Vermont quarries. He sent his product to distant parts of the state by wagon. Want of transportation then as now has delayed development in this important and highly renumerative enterprise. All of the marble, thus far quarried in Alabama, has come from the upper layer of the beds. This s manifestly not the purest or best of the bed.

There are not fewer than sixteen outcrops of marble in Talladega County. Some of these show a pure black, some variegated, all susceptible of the highest polish, and practically inexhaustible in supply. Others are pure white, and lying side by side with these, are richly variegated marble, along side of the white and variegated, is at least one large outcrop of dark blue. In the quarry of Dr. Hill, near Syllacauga, blocks are found with several divisions by the color lines.

On the property of Mr. Moore, two miles from Munford, there is a bluff of marble, bordering a creek, 40 to 50 feet high and 1,000 feet or more long.

THE CHURCHES.

Religious zeal in Birmingham is healthy and general. The city ordinances forbid traffic in the shops, and forbid custom to bars or barber shops on Sunday. The streets are quiet and orderly on that day. Of course the furnaces by the necessity of their machinery and methods, are run without cessation for the whole seven days and nights of the week, but all other industries cease with the end of the sixth day. The Sunday amusements go no farther than car or carriage drives in a quiet way in the afternoons to the parks. A professional Base Ball Club attempted to continue their daily games on Sunday, but the public soon frowned them down. There is never any pretence of amusements at the Theatre on Sunday at any hour.

The Catholic, Episcopal, Presbyterian and Methodist Churches, in the chief divisions of the last two, and the Baptist are all constantly growing in members. The Jews are now erecting a handsome Synagogue. The Baptists have recently (July, 1886,) completed a beautiful church, seating 1,000 or more, and are preparing to build another. The Presbyterians promise to build soon, a large and handsome brick, and the Episcopalians are beginning to prepare for a large stone church. The Methodist Episcopal Church South, completed a handsome brick church, and placed in it a $3,000 organ. All of the churches now standing, are filled to overflow every Sunday with well dressed and attentive audiences. The choirs are amateur, but composed of highly cultivated voices, while singing is encouraged also in the body of the congregation.

The clergy are practical pastors as well as educated and able preachers.

There is a "Society of United Charities," which all religious bodies of the city directed by their representatives support.

The Young Men's Christian Association has rooms and an active organization.

The Women's Christian Union Temperance Association has an organized branch in the city.

SOCIAL CLUBS, ETC.

The Herma Vista and Alabama Clubs embrace the young gentlemen of the city. They give entertainments to which occasionally ladies are invited. Besides, there is a German Society, well supported by that nationality, among which there are not a few of the most worthy and influential men of the city.

There are, however, no men of leisure retired from business in Birmingham. An old man is seldom seen on the streets. The population came here not to rest and be merry, but to work and accumulate. Hospitality abounds, but not the habits or extravagances of old and finished society.

The Theatre is a handsome building. Some of the best actors play on its boards to full audiences.

There is a Public Library which grows in appreciation,

where magazines, newspapers and numerous valuable books are kept in good order.

The business men maintain a Board of Trade, and as stated previously, the Doctors are organized, while each religious denomination maintains its own Societies of both sexes.

The Hotel accommodations of Birmingham are increasing, both in quantity and quality. Two new brick houses for this purpose are just completed, and a third, which promises to be equal in style and comfort to any in the South, and which will command a wide and attractive view from its dome of many miles of valley and mountain scenery, is now under contract.

Generally, the private residences have plots of land, cultivated in flowers, which add to the home-like character of the premises. Some have kitchen gardens in the rear, of no mean proportions.

There is a busy life on the streets. Every man hase something to do, and is hastening to meet his duty. Failures in business are very rarely reported. The iron and coal industries pay many thousands and tens of thousands of money out weekly and monthly: the builders, the street railways, street contractors and other employers of labor, pay cash regularly to large bodies of wage-workers. These distribute their earnings in many channels, thus preserving a healthy tone thoroughout the business of the city.

The trade of the city is too young to have created great merchants as yet. Yet, there are few whose business is not progressive. The iron industries are generally well "sold up" on their products.

DAILY MARKET REPORT.

Birmingham Daily Age, June 25, 1886.

(Stocks and bonds revised by J. P. Mudd, Stock Broker.)

	Bid.	Asked.
Mary Pratt Furnace Co. 7 per cent. bonds,	100	100*
Eureka Iron Co. 7 per cent. bonds,	——	——
Alice Furnace Co. 7 per cent. bonds,	100	——
Elyton Land Co. stock,	10.00*	——
Avondale Land Co. stock,	150	200
First National Bank stock	155	160
Williamson Iron Co. 8 per cent. bonds,	101*	——

DAILY MARKET REPORT—CONTINUED.

	Bid	Asked
Alabama State Bank stock,	116⅔	125
Berney National Bank stock,	122½	——
Jefferson County 6 pet cent. bonds,	100*	——
Birmingham Street R. R. stock,	——	148
Birmingham Insurance Co. stock,	——	30
City Schools bonds, 7 per cent	102	——
Sloss Furnace Co. 7 per cent. bonds,	105*	——
Birmingham Gas Light Co. stock,	100	125
Jefferson County Savings Bank stock,	100	125
Market House Bonds,	102	——
Birmingham Ice Factory,	108	112
Southern Bridge Co.	——	100
Birmingham Chain Works,	——	100
City Sanitary 8 per cent. bonds,	——	115
Sloss Furnace stock,	100	——
Alice Furnace stock,	100	——

* Interest.

THE NEW INDUSTRIES

Which at this date (July,) are under way in and near Birmingham, are as follows:

Kansas City, Memphis and B'gham R. R.	$6,000,000
Good Water Extension of Ga. Cen. R. R.	2,000,000
Completion of the Ga. Pacific R. R.	1,000,000
Pioneer Manufacturing Co	1,000,000
DeBardeleben Coal and Iron Co.	1,000,000
Pratt Coal and Iron Co. Furnaces	1,000,000
Total	$12,000,000

There are other smaller iron industries projected, of importance, such as an iron bridge manufactory, a bolt and nut manufactory, stove works, etc. These enumerated will doubtless double the present population in five years.

SMITHFIELD.

Dr. Joseph R. Smith owned a cotton plantation on which he resided, near the village of Elyton, the capital of Jefferson County. The plantation lay in the valley, up against the mountain range to the North. Here he raised crops, and reared slaves and colts. Bold springs break out from the foot of the mountain, and their waters trace across the valley to be utilized, in those times, for man and beast. Five hundred acres of the old plantation now comprises Smithfield, the most important su-

burb of Birmingham. From the mountain elevation to the South and West, lies the Red Mountain, with the railroads crossing it, and the furnaces along their lines in full view. To the West and North lies the magnificent property of the Thomas Company, of Pennsylvania, now building furnaces and coke ovens, and in the same direction is the great Pratt Coal and Iron Company's property. To the West, a half mile, is Birmingham city limits.

Smithfied is a gently rolling plane, easily drained, and in every particular, a superior site for a great manufacturing town, combined with advantages for residence lots. It is held by its enterprising owner for settlement. Lots are sold on favorable terms, and various inducements offered to desirable purchasers. Dr. Smith has opened a circular driving park, two-thirds of a mile around, well shaded, and free to the public amusement. This park drive cost him hundreds of dollars to grade. The venerable proprietor, is in truth, entitled to be known as the most enterprising man of his years in the county.

A few hundred people already live in Smithfied, and the number steadily increases. The Birmingham and Pratt Mines Street Railway passes through its borders. A macadamized County road runs through it. Wells of the best water and springs along the mountain side abound. Residence lots may be had upon the mountain tops, covering a wide view, and where the atmosphere is always cool in mid summer.

THE PRESS.

We have seen that Robert H. Henly put up the first newspaper in Birmingham, and it was published in the office of the first railroad passing the site of the city. From that day to this the newspapers of the Magic City and the railroads crossing here, have joined hands and hearts to promote its prosperity. It is not easy to determine the relative efficiency of the parties to that joint purpose. They have become one in motive and inseparable in achievement. The newspaper literature of Birmingham is apart from that of the great body of the press of the State. It represents the thought which works to the future, and to undeveloped conditions, as the hope of Alabama. The life for which it speaks would take no step backward to repair the past, but ever trust the future for its realiza-

tions. A single twelve months of this life sees a wooded mountain side converted into a populous town, and a million or two dollars invested there in active business, and this incident is now under process of excution in several localities near the city. Actors in these changes, the newspapers are quick to find the intellectual tone of their constituencies. Thus it happens, that as the industries of Birmingham are peculiar, as regards all else in Alabama, so the press of the city is looked upon elsewhere in the State with the curiosity of a fresh discovery. It is closely watched, to see that new industrial and social conditions may not develop new political thought.

The Birmingham Age covers the morning field. It was established in 1874 by Willis Roberts, the senior of the firm who print this book, under the name of the Weekly Iron Age. Mr. Roberts is one of the most progressive men of the city, and takes great pride in his offspring, rejoicing in the fact that it is daily increasing its usefulness. In 1881, the first issue of a daily was made by Garrett & Evans who were then the owners. In September, 1882, a stock company was formed by which J. L. Watkins was made editor, the position he now ably fills. In 1885 Chas. M. Hayes, an experienced newspaper man of Nashville, Tennessee, bought an interest and assumed the management of the business department. Since then the Daily has been enlarged, and at present it is published 8 pages daily and 12 pages on Sundays. The Weekly is 8 pages, and is published every Thursday. The Age being the only paper published in the industrial and mineral region of Alabama taking Associated Press dispatches occupies a vantage ground possessed by few other papers, and as the city grows its circulation radiates in every direction.

The Evening Chronicle is in a prosperous condition. It is thoroughly Alabamian in character, taking for its inspiration the life and faith of Birmingham, "push." It seeks to place its influence first at home, and rely upon the footing of home merit to sustain it in its excursion beyond. It is one of the authorities chiefly quoted in all parts of the State to interpret the scope of Birmingham enterprises and the drift of Birmingham politics. Its local department is well filled. Its editor is a son of a distinguished leader of politics in the mineral region of Alabama, in his life time, and its business manager a descendant of one of

the most influential and longest established families in the same section.

The Labor Union is a vigorous organ of the Knights of Labor, published in neat form and weekly, full of items of industrial news.

The Christian Advocate is a religious weekly.

Thousands of copies of newspapers and periodicals are sold on the streets, and at the book stores, Saturday evenings and Sunday mornings, to the working people.

The editors of the Birmingham Dailies are young Southerners, fully alive to their opportunities. They leave no effort untried to attract here, the honest laboring man, and the hopeful investor of capital. They have accomplised in their work, more substantial benefit to the whole body of the population than any other class of citizens.

THE EAST LAKE LAND COMPANY.

The previous pages had all been in type when on July 6th, the East Lake Land Company was organized in Birmingham. Robert Jemison, one of the younger merchants of the city, and a son of the former co-partner of Col. Powell, as before mentioned, is the President. The incorporators are all young and prosperous business men of Birmingham.

This Company has purchased 2,000 acres of land, three miles from the city, which is to be devoted to residence lots. The lots will be large, so as to leave room for a kitchen garden about each house. None are to be sold, only to *bona fide* residents, workingmen and business men, who presumably labor or do business in the city. There will be no crowding. East Lake Park is to be a country neighborhood, where the peaceful and industrious citizens and their families go to find homes for the length of their lives. No lots are to go to speculators, and the fictitious boomer of real estate will be absolutely void of form or life here. Low prices for lots will be the order. A railroad with improved steam motor will be at once built to connect the city with this suburb. The question of distance does not therefore, involve the important item of time to a man of steady habits.

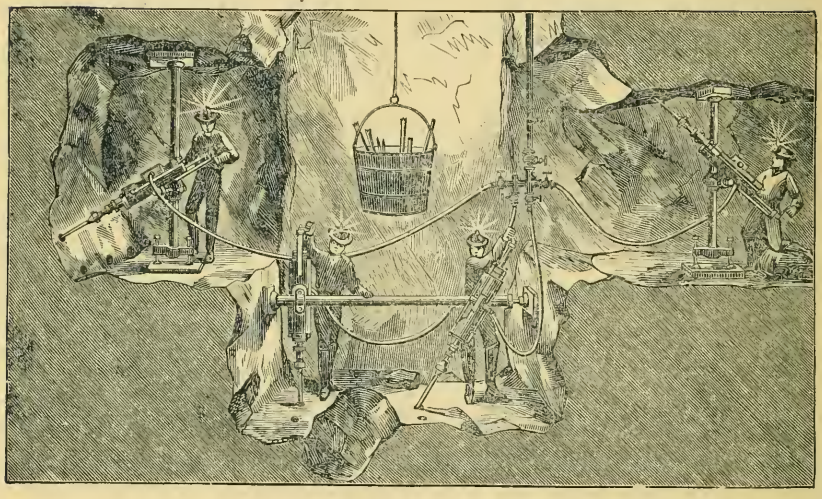
The consideration of suburban cheap homes is now finally solved in the future of Birmingham. Her young men of

energy and wealth, thoroughly identified with the city's fame and prosperity, have announced to the world, a broad and liberal policy of care for the working classes, and the thousands of limited means. These shall be protected in their rights to enjoy homes of their own. This local feature of the future of the city is a strong one indeed, and is full of significance as the surrounding mountains of riches.

The East Lake Park is divided by the never failing Village Creek. Along its borders are a multitude of springs of pure mountain water. The soil is a gravelly surface over clay foundation, naturally drained. The location is high and exempt from malarial influences.

Chapter XVII.

ROCK-DRILLING MACHINERY.



DRIFTING AND SINKING.

In these days of improved labor-saving appliances, no mining equipments is deemed complete without a suitable outfit of rock-drilling machines, to be run by steam or compressed air as the circumstances of the work may require. Indeed, whether it be to push ahead the opening up of a mine, or to increase its production under development, the modern power-drill is now looked upon as an indispensable adjunct to every well-regulated mining enterprise, for the purpose of carrying on the work as quickly and economically as possible.

The adoption of power drills in recent years by the majority of mines throughout the country has made these machines so

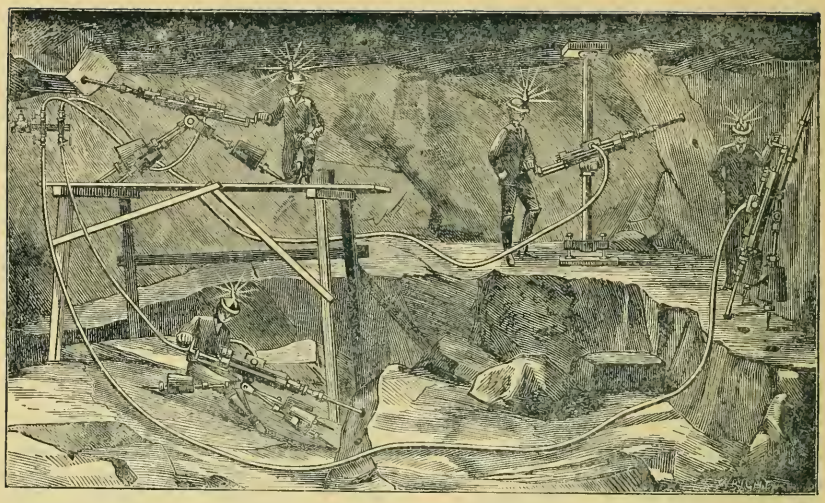
well known, and the advantages derived by their use have become so generally appreciated that the superiority of this mode of rock-drilling over hand-labor is no longer questioned, and it needs no further or better demonstration than that shown by the results of practical experience in so many of the best conducted and most productive mines of our land.

The great advantages of power-drilling being conceded, the selection of the best machines for the purpose is the next and most important step to be considered, for the greater or less success of the system depends entirely on the character of the machinery employed. The money paid for a plant is worse than thrown away if it is spent on machinery that, owing to faulty construction or cheap workmanship, is not adapted to the requirements of the work, or if ample power is not supplied to run the machinery properly.

Drilling in hard rock or ore is, from the nature of the work, the hardest that a machine can be put to, and it calls for peculiar qualities of strength combined with lightness, rapidity of movement combined with durability, and great effective power combined with simplicity of mechanism, which but very few machines possess.

Prior to the introduction in 1870 of the now famous Ingersoll Rock Drill, there had been no rock-boring machine constructed which had met with general favor. Many attempts had been made to produce a rock drill which should combine the essential qualities required in this class of machinery, but these attempts had resulted in complete failures, or at best, only in partial success.

The advent of the Ingersoll Rock Drill brought about a wonderful change in the methods of mining and rock excavating in general, and it only needed its appearance, a few years later, under the new and improved form named the "Eclipse," to firmly establish itself as the standard machine of its class, destined to become the popular favorite and to be universally adopted.



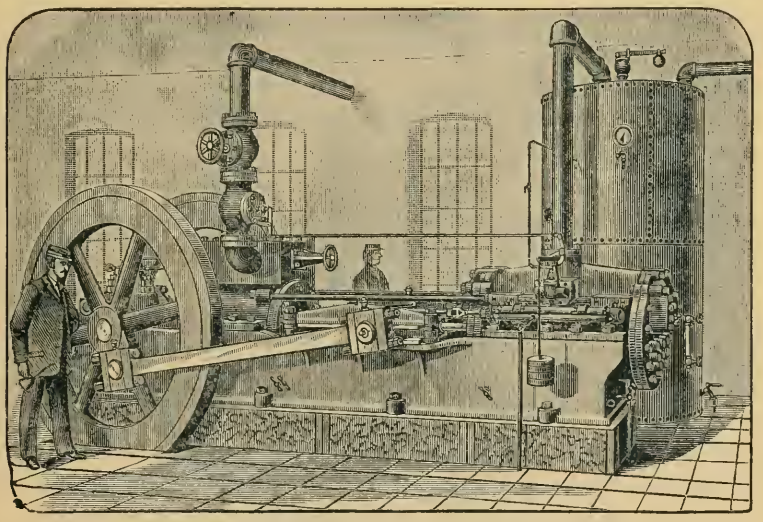
STOPING AND PIT MINING.

The principal feature of the "Eclipse" Drill is its valve motion, which is an entirely novel and most ingenious device, but very simple withal. It is an independent, positive moving valve, shifted *only* and directly by the steam or air used, so that rocker arms or valve tappets (that source of so much mischief in all other drills) are entirely done away with, and breakages reduced to a minimum as also the number of quick moving and wearing parts.

Perfect as the "Eclipse" Drill seemed to be when first produced, it has still been undergoing constant improvement, both in the machine itself and in the various styles of mountings required for different kinds of work. The valve movement has remained the same, practice having shown that it can not be improved upon; but other parts of the drill have been modified, according as a more extended experience suggested further improvement. The piston and chuck, for instance, are now made in one solid piece of forged steel, the upper end of the steel bit being held in the chuck by a round key and a U-shaped bolt, the whole arrangement imparting great solidity and strength where it is most needed to stand the effects of repeated powerful blows against hard rock, while allowing a much readier yet firmer adjustment of the bit in the chuck. Other additions and altera-

tions have been made from time to time, all tending to increase the effectiveness and strength of the machine, whilst simplyfying its mechanism, thus materially reducing the possibility of its getting out of order and liability to breakages. This drill, in its prerent shape, is so well adapted to all kinds of rock excavation and performs its work so rapidly, steadily and reliably, that it is difficult to see wherein human ingenuity can improve it any further.

The engravings represent the Ingersoll Eclipse Rock Drill in the different positions as generally used for work under ground. The first cut shows the Drill mounted on plain Shaft Bar for sinking, also on Drifting Columns with arms for tunnelling, drifting, etc. The next cut represents the Drill supported on Arm Column and also on Tripods, showing some of the many positions to which the Tripod can be adjusted for drilling in



INGERSOLL "STRAIGHT LINE" COMPRESSOR.

room excavations, overhand and underhand, stoping, and all large workings under ground, or for surface work where a column can not be properly braced. The drill can be changed from column to tripod at will, and on either mounting, can be directed any angle from vertical, up or down, to horizontal, with equal effect.

If the drills are to be run by compressed air, either for convenience or necessity, a perfectly reliable compressor of ample

capacity should be provided. For the sake of saving a few dollars in the original cost of a plant, the mistake is often made of buying a compressor either too small to run the required number of drills effectively, or so inferior in construction, that it can not safely be relied upon to do its duty smoothly, steadily and continuously for any length of time, the result being that the machine requires much looking after and is continually breaking down at some point or other, just when the power is most needed, thereby causing expensive delays and costly repairs. The full benefit of power drilling can only be secured by employing the best and most reliable drills and compressor, of sufficient capacity to do the work.

The new improved "Straight Line" Air Compressors made by the Ingersoll Rock Drill Company are reputed as being the best in this line of machinery. As the space of this article will not allow an extended description of their construction, we will merely mention some of the principal features which combine to make these compressors so eminently successful.

The steam and air cylinders being placed in line, and the two pistons connected to the same rod, insures steady motion with direct strains. They are designed for medium stroke, low speed, which experience has proved to give the best results with the least wear on the machine.

An improved form of poppet valve has been adopted both for the inlet and outlet of the air, which increases the capacity and effectiveness of the compressor as compared with the old style slide and center stem poppet valves. A perfect system of cooling the air during compression is effected by a spray pump attached to the air cylinder, and by this means, together with a peculiarly constructed tank, the reduction of the temperature is not only accomplished, but practically dry air supplied; an important point in that it obviates the difficulty of freezing in exhaust ports of machines. The steam cylinders are fitted with an improved form of adjustable cut-off valve to secure the greatest economy of steam. Each machine is provided with a patent automatic Regulator which adjusts the supply of air to the demand pume and on the compressor by any number of drills or other machines that may be running at any time up to its full capacity: this is done entirely automatically and positively, so that it requires no attention from the engineer.

The whole machine gives evidence of being compactly and strongly built, with the best of machinery and workmanship. It has steel crank and cross-head pins, phospher bronze boxes, valves and guides, sectional composition packing rings, etc., etc.

These compressors are built in various sizes, varying in capacity to run from 1 to 20 drills, and, when a larger volume of air is required, the Duplex form is generally used, which ranges up to 40 drills.

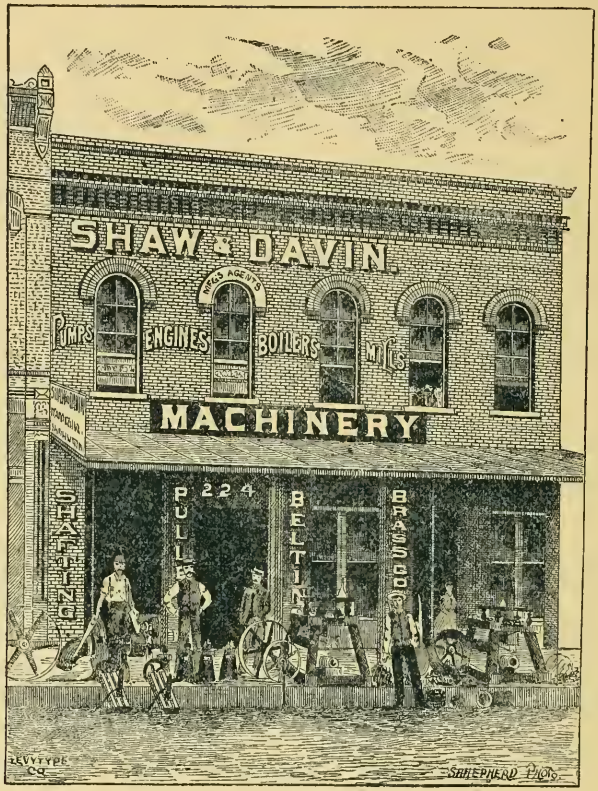
Where water power is available a belt compressor can be used to advantage, as it obviates the necessity of steam power, and consequently saves the cost of boiler and fuel. This style is made either with pulley to run by belt, or geared, to connect direct to shaft of water wheel or independent engine. Compressed air can be conducted almost any distance through suitable iron pipe, without material loss, and it will run any engine that can be driven by steam.

Mining men and others contemplating the use of improved machinery in this line, would do well to send for one of the very interesting catalogues published by the Ingersoll Rock Drill Company of 10 Park Place, New York.

ADVERTISEMENTS.

SHAW & DAVIN,

MACHINERY.



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BOOTS AND SHOES.

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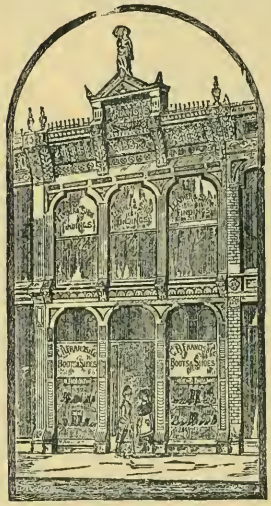

The old reliable shoe men, finding their old stand inadequate for the accommodation of their growing trade, have just completed for themselves a large store on

Second Avenue,

NEAR 21st STREET,

fitting it up with all the elegance of a Parlor, and with an eye to Modern Improvements, making it superior in all its appointments as a

FIRST-CLASS SHOE STORE,

Their second floor is occupied by shoemakers' supplies and leather of all descriptions.

They manufacture shoes to special measure, and also, make Boot and Gaiter Uppers to measure at Cincinnati prices.

Our Repair Shop is the best in the city.

We offer great bargains in Boots and Shoes at our New Store than ever before. Come and be convinced.

C. H. FRANCIS & CO.

The Great Shoe Men, 2d Avenue, near 21st Street. Bronze, Green and Gold Front.

E. WALL. —ESTABLISHED IN 1880.— P. GIACOPAZZI

WALL & GIACOPAZZI,

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FRUITS, PRODUCE

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The process of Photo-Engraving is rapidly taking the place of the older and slower methods of producing Illustrations, and recommends itself by its greater cheapness, speed and faithful reproduction of the objects desired.

We have a competent staff of Draughtsmen and Artists permanently employed, who will make Designs, for any purpose, which will be submitted to customer for approval if so desired.

We have our own Electric Light of 6,000-candle power, which enables us to work independently of the sun, and gives us a decided advantage over other firms who are dependent upon the uncertainties of the weather.

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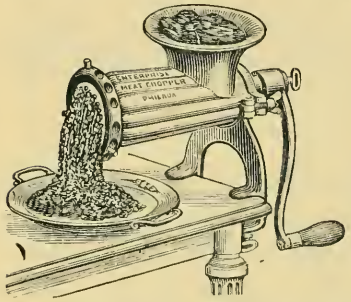

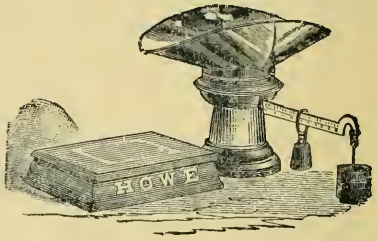

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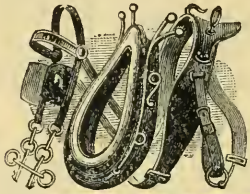
Saddles,  Bridles,

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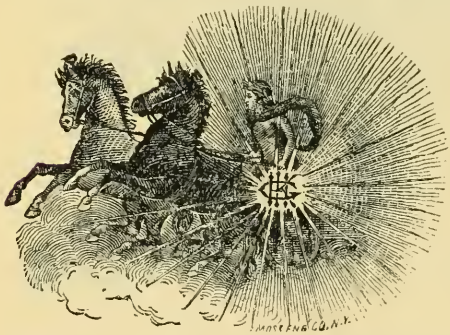

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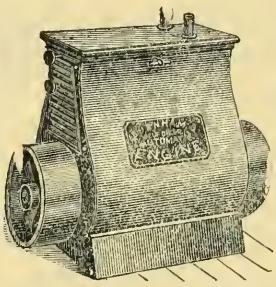

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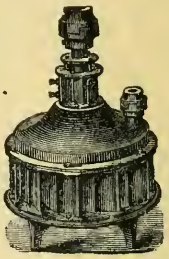

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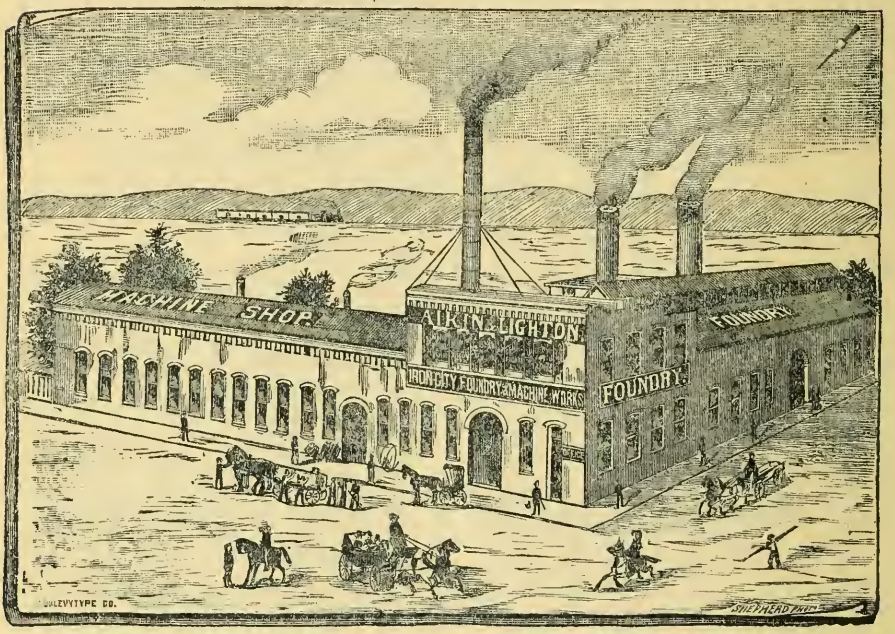

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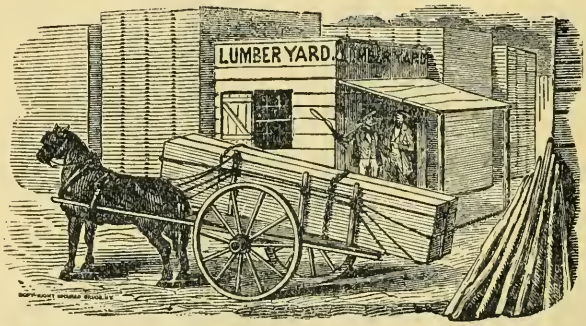

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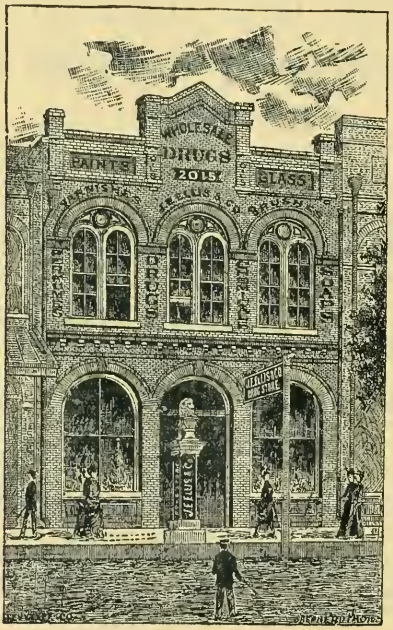

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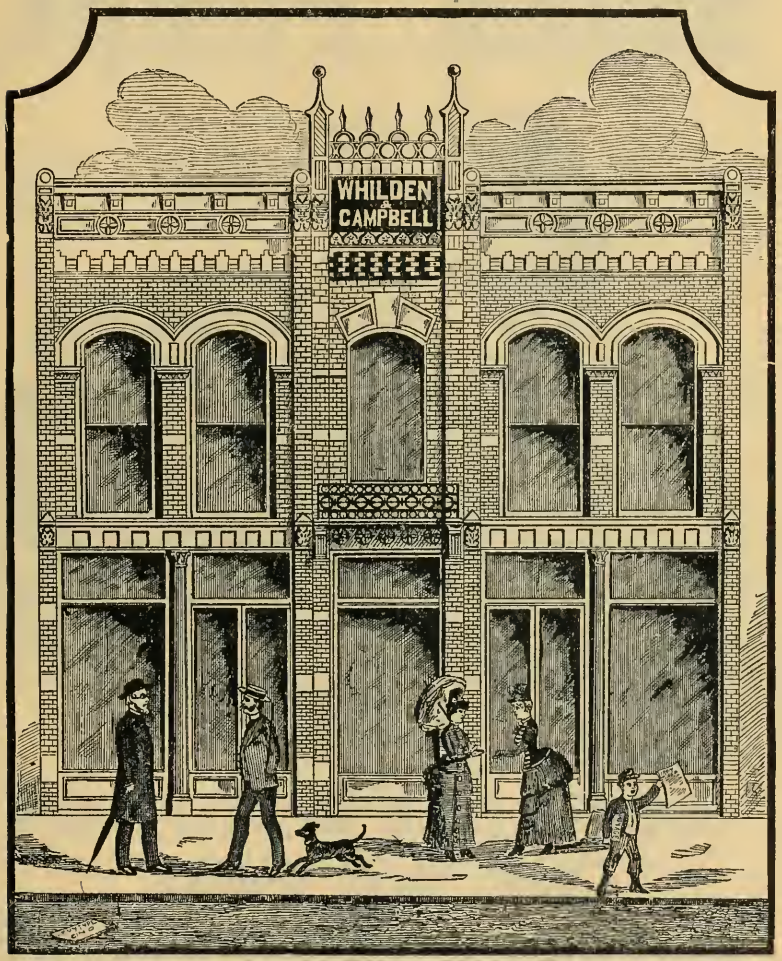

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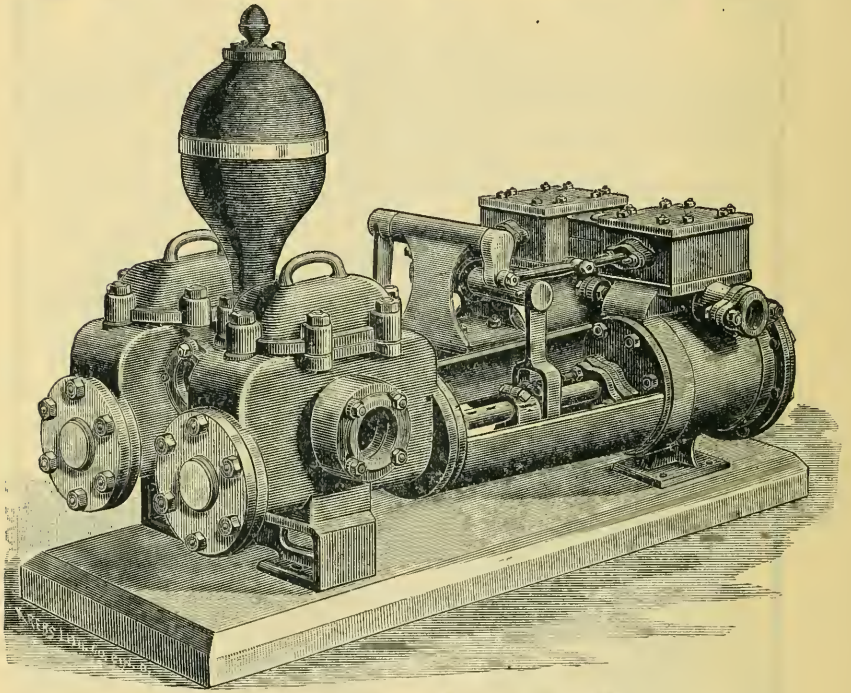

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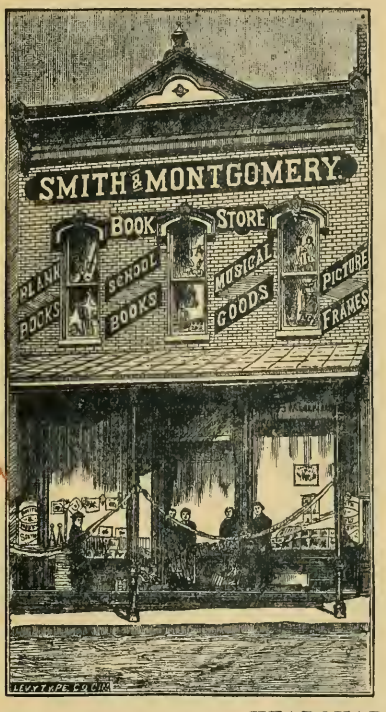

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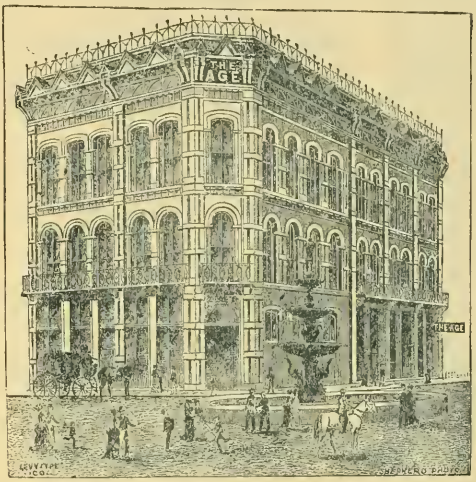

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ERRATA.

Line 9, of Preface, insert to *promise* between "but" and "that."
Line 13, page 29, read 40 for "10."
Line 3, page 113, read 1885 for "1875."

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